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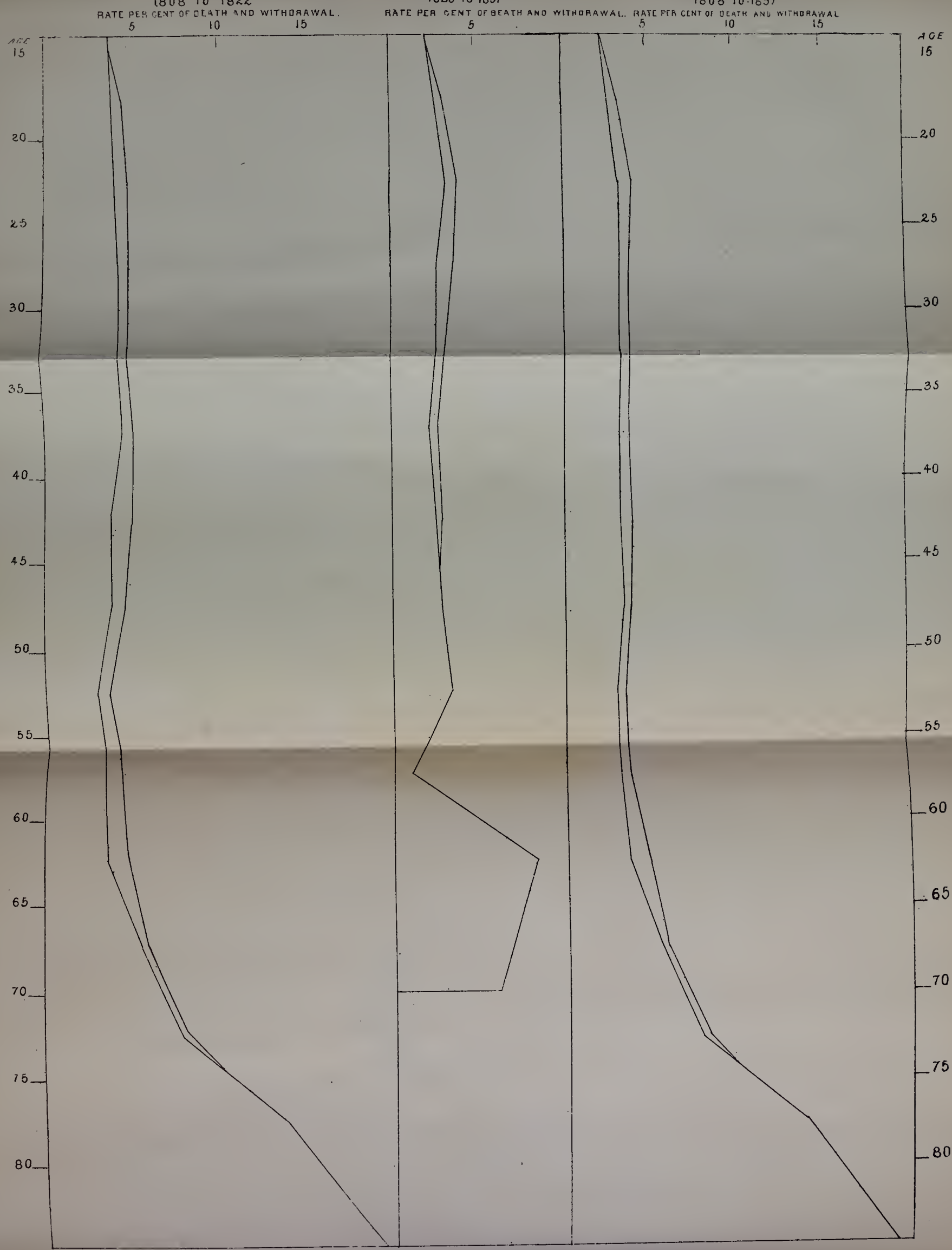
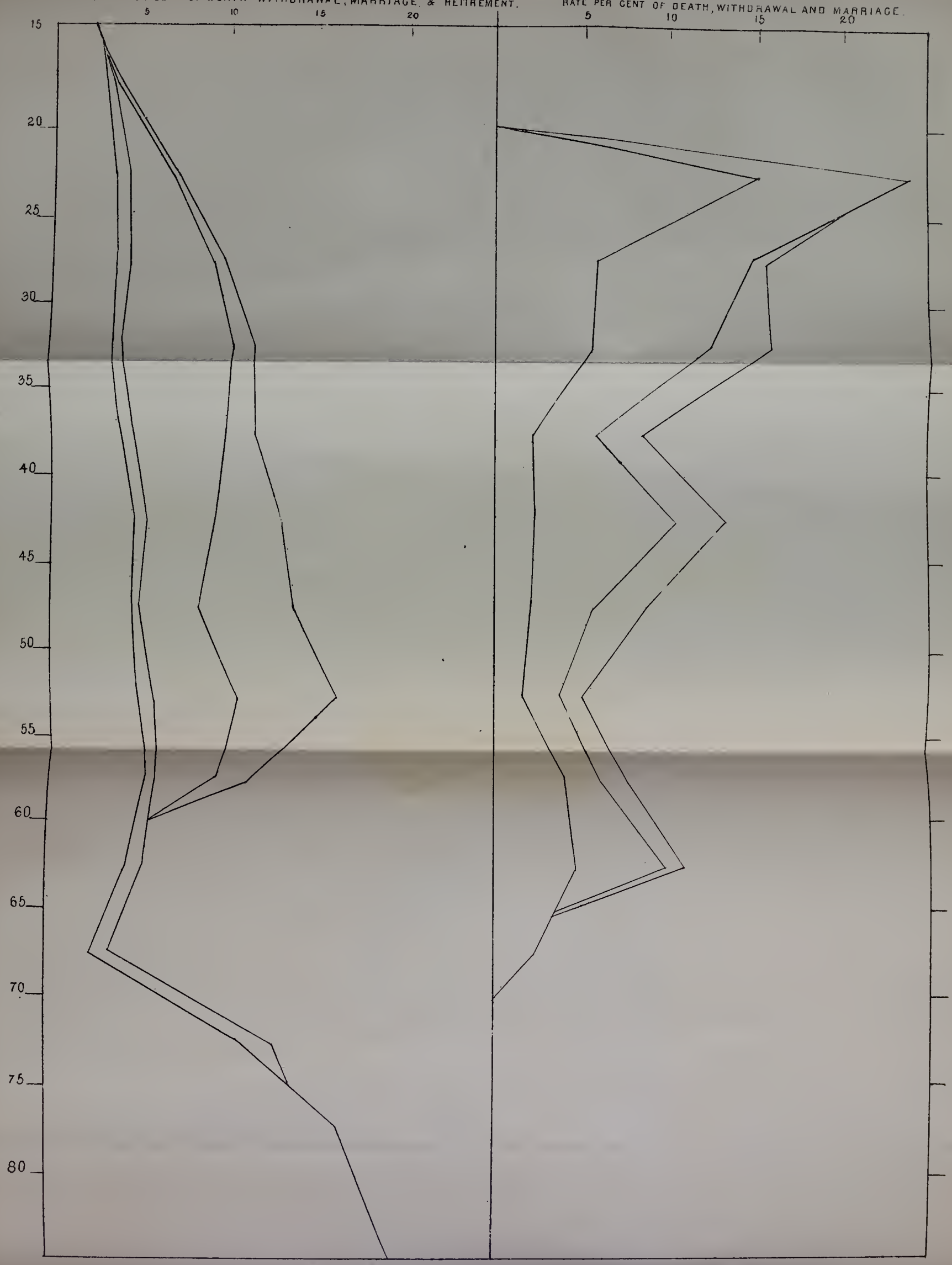
Nº 1. MADRAS MILITARY FUND. TOTAL OFFICERS. MORTALITY AND WITHDRAWAL IN THE TWO PERIODS 1808 TO 1822. AND 1823 TO 1857, AND IN THE FIFTY YEARS 1808 TO 1857.



THE FIRST SPACE SHOWS THE RATE PER CENT OF MORTALITY.
SECOND SPACE OF WITHDRAWAL

No 2. MADRAS MILITARY FUND _ BACHELORS _ 1808 TO 1857.



THE FIRST SPACE SHOWS THE RATE PER CENT OF MORTALITY AT THE CORRESPONDING AGE.
THE SECOND SPACE THE RATE PER CENT OF WITHDRAWAL
THE THIRD SPACE " THE RATE PER CENT OF MARRIAGE.

THE FIRST SPACE SHOWS THE RATE PER CENT OF MORTALITY.
THE SECOND SPACE THE RATE PER CENT OF WITHDRAWAL.
THE THIRD SPACE THE RATE PER CENT OF MARRIAGE.

[*Extracted from* The Assurance Magazine and Journal of the Institute of Actuaries, Vol. XI., page 1.]

3

ON THE

RATE OF MORTALITY AND MARRIAGE

AMONGST

EUROPEANS IN INDIA.

BY

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The great changes which have lately taken place in India—the progress of railways, the extension of commerce, and the impetus which is likely to be given to the emigration of Europeans to those vast fields of enterprise—cannot but add peculiar interest to any inquiries tending to throw light on the causes which affect the health or life of Europeans in that country. The difficulties of arriving at any sound conclusions on these subjects have always been great. In dominions so widely spread, comprising all climates, from the most delightful temperatures of perpetual spring to the fever-haunted jungles and deadly swamp, every cause that affects the health of man may be found at work. Nor is it easy to say to what extent the deadly influences may be avoided, and the localities known for their salubrity be made available for the European. The necessities of war may require large bodies of men to pass through or remain where the dangers of the climate are nevertheless well

known. The first settlements of commerce may have been chosen, not for their salubrity, but as being the only spots where a feeble band of merchants were allowed to erect their temporary factories for trade—unhealthy, but convenient for their shipping—and which, like Calcutta, have since grown into mighty cities of palaces, with their population counted by hundreds of thousands. It is gratifying to reflect, however, that all the observations which have lately been made, agree in showing a great improvement in the health of Europeans in India, and in proving, beyond a doubt, that much of the mortality of former years was due to preventible causes. The first and most important change has been in the improved habits of social life. The establishment of sanatoria, the greater facilities for removal to the hill countries, more frequent and rapid intercourse with Europe, more careful attention paid to drainage and other local improvements, and last, not least, the growing experience and skill of medical officers in the European armies, have produced the most important results.

The precise extent to which these causes have operated, can only be ascertained by collecting statistics in the proper form, and comparing them together; and the question is, from whence can trustworthy facts be obtained? The census of the population, which we have in this country in such perfection, is wanting for the European community in India; and, for the mercantile class, it will probably be many years before any general system of registration will be efficiently established. But, happily, for the purposes of this inquiry, besides the books of the India House, the Funds, which have been established in every Presidency for making provision for the widows and children of the military or civil servants of the late East India Company, contain amongst their records minute particulars relating to the mortality and marriage amongst the members and their families. It is true that, having been entered in their books, not with the view to theoretical inquiries, but for financial purposes, they are seldom arranged in the form required, and it is only with very great expenditure of labour and time that they can be reduced to a useful shape. In all cases, too, a very large number of material facts will be found wanting. But, after making ample allowance for these deficiencies, there remains a mass of important information which can be rendered available. Having lately, in conjunction with my friend Mr. Hardy, been engaged in an elaborate inquiry into one of these Funds—the Madras Military Fund—in the course of which new light has been thrown upon several debatable points,

and some novel questions raised, I have thought it desirable to bring together some of the leading facts relating to mortality and marriage in that Presidency, and compare them with such as have appeared in previous Reports of the same or similar Funds in the other Presidencies. The greater part of all such Reports is necessarily occupied with financial matters of peculiar interest to the directors and members of the Funds, but not useful for scientific purposes. This is an additional reason for extracting from them such information as may be of service to the actuary, and for making comparisons which may show the present state of our knowledge on these subjects, and the deficiencies to which attention may be best directed hereafter.

Sources of information as to European mortality in India.

Before explaining the data last obtained, I will endeavour to give a brief description of the principal sources of our information up to the present time, as to European mortality in India.

It does not appear to be much more than 30 years since the publication of the first paper of any importance on this subject. It is stated, in an interesting paper in the *Calcutta Review* for March, 1853, to have been an article "On the Duration of Life in the Bengal Civil Service," which was printed in a number, for September, 1831, of a periodical called the *Gleanings of Science,* published in Calcutta, but which is now extinct.

In the *Journal of the Asiatic Society,* for July, 1832, appeared a paper, read by Mr. Prinsep before that Society, on the "Mortality of the Bengal Civil Service."

In a list of publications referred to by Messrs. Finlaison and Lewis, in their remarks on Mr. Neison's report of the Bengal Military Fund in 1849, the next paper of consequence is by Mr. Curnin, of the Mint of Calcutta, who is stated, about the year 1835, to have collected, from official records of the India House, the data relating to more than 12,000 cadets, which he communicated to Mr. Finlaison, who, in 1836, formed a plan for a Retiring Fund for the officers of the East Indian army, which was based upon these observations. He also constructed life annuity tables therefrom, which are now in the possession of Mr. A. G. Finlaison, and have been used in valuations on different occasions. Of 12,039 officers, 5,706 had died, 1,706 left the service, and 4,627 were living at the date of observation. Mr. Curnin appears to have subdivided his facts, so as to form separate tables for Bengal and Madras, whilst for Bombay he used the combined experience

of Madras and Bombay. The total number of officers recorded for Bengal was 5,901; and from 1,206 baptismal certificates, which he had carefully examined, he found the mean age of a cadet, on his arrival in India, to be within a few days of 18 years. In his reply to Messrs. Finlaison and Lewis' observations, Mr. Neison states, that the whole of Mr. Curnin's MSS. and data had been purchased and presented to him, some years ago, by a friend in Calcutta, and he points out a slight error in the totals, to show that he had gained possession of the original papers. He also contends that Mr. Curnin was one of the first to perceive that the casualties in the last century so far exceeded those amongst officers of the same standing since the present century commenced, that they ought not to be combined in one table. Mr. Curnin had accordingly investigated, separately, the results for 3,500 officers, who were placed on the Bengal establishment before 1809, and 3,898 who had joined it since.

In 1836, several valuable papers appeared on this subject. Major Henderson, in the 20th vol. of the *Asiatic Researches*, pp. 190–244, gives a law of mortality for British India, showing the rate of mortality amongst British officers from 1814 to 1833 —a period of 20 years. He alludes to the documents which were in possession of the Bengal Government Committee, appointed in 1834 to consider the expediency of forming a Government Life Assurance Institution, as bearing out, in most respects, Mr. Curnin's calculations, with which, in the main points, Major Henderson's facts also agree, especially if the comparison be made for the last 20 years only.

In the same year also appeared Mr. Davies' Report of the Bombay Civil Service Fund.

A paper by Mr. Christie, read before the Statistical Society, was printed in their Journal for 1838, "On the Rate of Mortality amongst Officers retired from the Indian Army."

An elaborate Report by Mr. Davies, dated 1st June, 1839, on the Madras Military Fund, contains some original tables, relating both to mortality amongst officers and their wives, the mortality and remarriage of widows, and the mortality of children, deduced from the experience of the Fund to the end of 1836. These observations were afterwards corrected to the end of 1840, in his second Report, in 1845, from facts furnished to him by Colonel de Havilland, in whose letters and Reports are also included some valuable statistics to a later date, though they require simplifying and separating from a mass of other matter.

In 1839 also appeared Mr. Woolhouse's "Investigations of Mortality in the Indian Army." The materials were supplied by Messrs. Dodwell and Miles' Alphabetical List of the Officers of the Indian Army, with the dates of their respective promotion, retirement, resignation, or death, whether in India or Europe, from the year 1760 to 1834 inclusive, corrected to September 30th, 1837. The facts observed were for 6,017 officers in Bengal, 4,260 Madras, and 2,003 Bombay, from which were deduced two separate tables of mortality, one for Bengal, and one for Madras and Bombay combined. They were prepared with great skill, and have since been used by high authorities. Mr. Neison objects, that they include the mortality of the past century, which should be given separately; and further, that, on using the permission he had obtained, in 1847, to extract the correct facts from the Patronage Books of the India House, he found numerous errors in the particulars and dates, and asserts that he has prepared from his corrected copy more perfect tables of mortality, to which we shall refer hereafter. In 1843, from the same List, Mr. Davies deduced a table of mortality for the valuation of the Bengal Military Fund, which appears in his Report, of February, 1844. He seems, indeed, to have used Mr. Woolhouse's facts of death and discontinuance, and merely to have graduated a new table therefrom.

In 1840, Mr. Davies' Report on the Madras Medical Fund contains the original statistics from Dodwell and Miles' List, relating to medical officers, to the end of 1838; but, finding that the rate of mortality nearly corresponded with that for the Madras Military Fund, he used the latter table for the valuation of the Fund. The mortality amongst wives, widows, and children of the Madras Medical are also compared with those of the Madras Military Fund.

Mr. Neison's Report, of 25th August, 1849, contains a great variety of original observations, both upon male and female lives. Having, as he considered, reason to doubt the correctness of the facts in Dodwell and Miles' List, he was permitted by the Court of Directors of the East India Company to have access to the records from which a true table of mortality might be constructed. He, accordingly, used the opportunity to make abstracts, not merely for the Bengal Presidency, but for the whole of India, the results of which he promises to take an early opportunity of publishing in a separate form. The Patronage Books of the India House afforded the means of tracing the appointment, with the age of the officer at the time, testified by certificates of birth, and his dates of promotion through successive gradations of rank, till his

death, retirement, resignation, &c. Table No. 1, exhibits an analysis of such events to all the cadets who entered the Bengal establishment from 1st January, 1800, to 31st December, 1847. Of 5,199 officers entering in that period, 1,874 had died, 781 had discontinued from active service from various causes, and 2,544 were living at the close of the observations. The number exposed to the risk of mortality for a year, was 77,985; and of 100, who entered a year of life, 2·40 had died. The results, being grouped in quinquennial periods of age, showed so greatly a diminished mortality, as compared with preceding returns, that he rearranged the 20 years' observations of Major Henderson, to give the mortality amongst those officers who entered the Bengal army in or after the year 1800, which then exhibited at the older ages a considerable diminution in the average mortality, whilst those of Mr. Davies do not differ much from the totals of Major Henderson's data for officers who entered both before and after 1800.

Another table shows the mortality amongst the officers who entered from 1800 to 1847 inclusive, but excluding only those who had been struck off, cashiered, or dismissed, so as to exhibit the rate of mortality both on the active and retired lists combined. This showed, to the same number of entries, 2,019 deaths, 75 only dismissed, &c., and 3,105 living, on 31st December, 1847. The total number exposed to risk was 88,630, and the probability of dying in a year, 2·28 per cent. At the extreme of the table, the mortality was found to approximate to Mr. Christie's table of retired Indian officers, and not to differ much from the general mortality of England and Wales at the corresponding periods of age.

In regard to the mortality amongst wives of officers, Mr. Neison found the lists of the married subscribers of the Bengal Military Fund too defective as to ages to be of much service, without great labour required to fill up the deficiencies, and he therefore used, as the basis of his calculations, the table compiled by Mr. Davies, and given in his Report of 1839, from the experience of the Madras Military Fund to 1836; but, for deaths and remarriages amongst widows, he rearranged the experience of the Bengal Military Fund to 1846, showing, out of the number of 635 who entered the list at various ages, the deaths, remarriages, withdrawals, &c., at all ages. Other tables showed, out of a given number, 875, the proportion of officers at different ages marrying wives of different ages; also, the average age of officers on entering upon, or their present age as existing in, different ranks, &c.

The great reduction in the rate of mortality, seen in Mr. Neison's original tables in this Report, led to various questions discussed in the Report being submitted to the opinion of Mr. A. G. Finlaison and Mr. Lewis (Actuary to the Family Endowment Society), who, in a Report, 30th November, 1855, especially examined his law of mortality for British India, as applicable to the valuation of the Fund. They particularly object to the mortality amongst the retired officers of the service being taken as representing that amongst the members of the Fund, many of whom cease connexion with the Fund altogether after retirement. They also contend that, as compared with the observations of Messrs. Curnin, Finlaison, Henderson, Woolhouse, and Davies, at the mean ages 19 to 63, Mr. Neison's table shows only 1,000 deaths, where the others combined would give 1,387 deaths, and in his second table of active and retired lists combined, 1,000 deaths only for 1,665. But they agree with him in the views which he took of female mortality, whether amongst wives or widows, and his final adoption of the female life table which he had constructed for England and Wales, as nearly according with the facts observed.

In his reply, dated 16th April, 1856, to this paper, Mr. Neison brings a variety of facts, both from the Bengal and Madras, and both from the Military and Medical Funds, to prove his conclusions, that a very great diminution has taken place in the mortality in India during the present century; and he objects to deductions drawn from observations which go as far back as 1760. He analyses, in a very interesting manner, the authorities quoted, and refers for confirmation of his views to his recent elaborate Report on the Madras Medical Fund, and of his Reports on the Bengal Civil and Madras Civil Funds. In reply to a remark of Messrs. Finlaison and Lewis, that Mr. Curnin's observations had been borne out by the experience of the Legal and General and Royal Naval and Military Assurance Companies, he argues that their experience of 18 years is insufficient, and that the lives assured in India show a rate of mortality exceeding that of the services in general. He quotes Mr. Scotton Francis' publication, in 1850, whose investigation extended over 9,541 lives assured in the Oriental and Laudable Assurance Offices, in Calcutta, during the 33 years, 1815–47. Of these, 5,600 only were military lives; and the result is said to establish the fact, that the mortality is higher amongst mixed assured lives in India than amongst officers of the Bengal Military service. This was confirmed by his own investigation, for

the 15 years preceding 1853, of the New Oriental Company—the largest of all the Indian Assurance Societies.

I conclude this list of documents and Reports, in which I have incidentally or directly named most of the important sources of original information on the subject of this paper, by drawing attention to our President, Mr. Jellicoe's, paper "On the Rates of Premium to be charged for Assurances on the Lives of Military Officers serving in Bengal," read before this Institute in 1851. It gives, from Mr. Neison's first table in his Report for 1849—a table, admirably graduated by Gompertz's method—and also from Mr. Woolhouse's table for Bengal, the annuity and annual premium, at 4 per cent., properly loaded for actual use by Assurance Offices. The difference between the pure premiums in the two tables is, in Mr. Woolhouse's, as high as 21 per cent. in excess of Mr. Neison's table—a difference easily accounted for, I think, by the explanations I have above given.

Experience of the Madras Military Fund.

I now proceed to explain the mode in which the recent collection of facts from the experience of the Madras Military Fund has been formed, and to make a few comparisons of the results with previous observations.

The contingencies which occur, under the rules of the Fund, are of the most complicated character, for the subscriptions and widows' annuities vary with the rank of the officers, and the widows' annuities cease on their second marriage, but revive if they again become widows. The sons' pensions vary by classes, according to age, under 21, and the daughters' by the same classes of age under 21, and, by a separate contribution at the option of the father, may be continued till their marriage or death. With the view of obtaining as accurate a valuation as possible of these difficult questions, it was decided to form original tables, as far as possible, from the actual experience of the Fund to the latest date. But no table of mortality had been calculated since one, corrected to 1840, by Mr. Griffith Davies, from facts furnished to him by Colonel de Havilland, who was then actuary of the Fund. When we came to examine the large bundles of papers, which were handed over to us by Colonel J. T. Smith, the present actuary, we found them full of long lists of corrections, and dates of births, deaths, and marriages, both of members and their families, extending from 1840 to 1855, with which to amend Mr. Davies' table. It was evidently a much easier task to compile the whole experience of the

Fund anew, for 50 years, from 1808 to 1857, than to make such corrections in documents 15 years old, without reference or index, and with names not given in the order of admission. Accordingly, a list of all the officers who had ever entered the Fund was applied for from Madras, in the order of admission; but it arrived only with the dates of admission against each name, the officers being classed by regiments. In the meantime, an index had been formed, and the corrections and new facts as to death, withdrawal, promotion, marriage, &c., noted in a rough printed copy, containing the names, in a form apparently used by Mr. Davies on the last occasion. But before commencing the copying into the new list, it was very desirable to ascertain if the ages and other dates were sufficiently correct for general conclusions. The authorities of the India House were applied to, to have the data checked by comparing the dates of birth, promotion, &c., with the Patronage Books of the India House. A preliminary comparison of a few pages, taken at random from the list, was sent in by permission, and the dates checked by their clerks. It then appeared that, on the total, 111 out of 152 facts, equal to about 72 per cent., were correct; 18, equal to 12 per cent., were corrected by them; and 23 new facts, or about 15 per cent., could be supplied to us. As these were important additions, the authorities of the India House kindly undertook to authorise the correction of the entire list, amounting to more than 5,000 names, with dates of birth, entry, promotion to every successive rank, death, retirement, &c.; and, though a considerable delay was thus caused, the increase of accuracy was well worth the labour and time employed. Two lists were eventually formed, A and B; the former, of officers, numbered in the order of admission on the Fund; and the latter, with the same number, but containing, from the date of marriage, either of first, second, third, or fourth wife, the name of the wife, her date of birth, death, or becoming a widow, with the rank of her husband at the time, and the date of birth and death or withdrawal of every son, and with the further date of marriage of every daughter, whenever it could be ascertained. There were, of course, many defects. In the older periods of the Fund, from 1808 to 1823, it was optional with an officer to become a member of the Fund when he pleased, and the date of marriage, which might have occurred many years before, or of the deaths of children who had been born and died before he entered the Fund, were consequently, in many instances, not recorded at all. But from 1823 to the present time, an officer is compelled to subscribe to the Fund as a condition of

his appointment, and it is consequently easy to trace, in almost every instance, his date of marriage, and the dates of birth of all his children. It requires only that the age of the wife should be accurately given, to afford us all the information we desire for forming tables of mortality or marriage. The form which we have now recommended for future use is so complete, that in a few years the data will be most valuable, and, with a little time and trouble, even many of the defects of the past registers may be filled in, since the facts are, no doubt, recorded somewhere in the books of the Fund, either directly or by implication. We found, for instance, that approximations to the date of marriage might be obtained from the age of the eldest child being given as an annuitant, &c.

The lists A and B having been thus formed, the particulars of the former were entered under schedules of ages, in which, for every age from entry, the rank for every year of an officer's life was shown by the initial letter of his rank, and his ceasing to belong to the Fund, either by death, withdrawal, resignation, or dismissal, marked at the age at which it occurred. By years of entry being counted only as half years, which would be the case on an average, the simple addition of the numbers at every age gave the living, with corresponding deaths, discontinuances, &c., in every rank. As the officers were entered in this table according to their order of entry, a separate table of mortality might, if necessary, be formed for every rank for every year of entry, from the commencement of the Fund. By continuing the insertion of the initial of rank in succeeding years, this table may at any time be resumed and amended, till the death or discontinuance of the last member of the Fund. This method, though more laborious than that suggested by Mr. Woolhouse in his excellent pamphlet, has the advantage of recording the facts at once, in such a form that they need never be recopied, and may be continued at pleasure. We have also suggested that, when the death of an officer is recorded, the age of his wife and his surviving children should be written against his name, so that the liability which is brought upon the Fund by his death may be averaged at every age.

The observations thus made are given in our Report (which is now in the course of being printed) for every year of entry for 50 years, since 1808; again, in a summary of decennial periods; and finally, in the two divisions from 1808 to 1822 inclusive, and from 1823 to 1857 inclusive—the former period being one of option as to age at entry, and the latter comprising all the events, from the officer's appointment as a cadet.

The following summary will show the number of observations in each class of facts, together with those from Mr. Davies' table, deduced from Colonel de Havilland's observations to 1840, and Mr. Neison's two tables of the Bengal army, from 1800 to 1847 inclusive:—

No. I.

	Entered.	Lived.	Died.	Withdrew or Discontinued.	Living at close of Observation.	Proportion per Cent. of Entered.			Exposed to Risk.	Mortality per Cent.
						Died.	Withdrawn.	Living.		
(1) Madras Military, 1808 to 1857 .	4,979	75,206	2,251	555	2,173	45·2	11·2	43·6	72,439	3·11
(2) Do. Mr. Davies', 1808 to 1840 . .	3,444	53,828	1,709	124	1,611	49·6	3·6	46·8	52,044	3·28
(3) Bengal Military, 1808 to 1847, Active only . .	5,199	80,975	1,874	781	2,544	36·1	15·0	48·9	77,985	2·40
(4) Do. including Retired	5,199	91,267	2,019	75	3,105	38·8	1·5	59·7	88,630	2·28

On this, it may be remarked, that the first Madras table includes, amongst the discontinuance, a large number of officers, mostly unmarried, who are assumed to have withdrawn from the Fund on their retirement, as no further trace could be found of their names, but Colonel de Havilland appears to have excluded only those who were dismissed or resigned. In like manner, Mr. Neison's first table is distinguished from his second, by the former being confined to active service in India, and the latter includes retired officers living in Europe; but both, as I understand it, were deduced, not from the experience of the Bengal Military Fund, but from that of the Bengal army generally. The effect of this would be, that the subscriptions after retirement would appear to be continued longer than the actual facts would warrant; but, as nearly all the cases of withdrawal are found by experience to be those of unmarried members, I do not attach the importance to this objection which Messrs. Finlaison and Lewis have given to it.

Mr. Davies' original table, from the experience of the Madras Military Fund to 1836, was obtained by ascertaining the number of officers, single or married, living in each rank, as given in the current accounts for every year; and then, by comparing the number of deaths in each year, and computing the average age of the members in each rank on the 31st December, 1836, he obtained the rate of mortality for the average age in each rank, and then, as he says, "laid down a curve, taking the ages as the abscissa, and

the mortality per cent. as the corresponding ordinates, making the inflections thereof as regular as I could, so as to preserve the character of a continued curve." This, it must be admitted, was a very rough way of deducing a table from original observations, but it was evidently the best he could then form, and it accounts for a fact which would otherwise greatly surprise us, namely, the very regular graduation of the resulting table. From 66 to 76, his table was made to correspond with Mr. Christie's table for retired officers, and from 76 and upwards with the Northampton table, as he found at that age the two latter tables nearly agreed, and the facts were too few for further graduation.

On computing the average age of existing officers in each rank, from our present observations, they were found to differ somewhat from Mr. Davies' results, and as I have also subdivided the observations for each rank, and for two periods of the Fund, the following comparison may be examined with some interest:—

No. II.

	G. Davies, 1808 to 1836.					Present Observations, 1808 to 1857.				
	Average Age of Officers		Mortality per Cent.			Average Age of Officers				Mortality per Cent.
							Existing in each Rank.			
	Entering Rank.	Existing in each Rank.	Single.	Married.	Both.	Entering Rank.	Single.	Married.	Both.	
Ensigns	19	21	2·91	12·00	3·09	19	20	25	20	3·39
Lieutenants	22	27	3·69	3·25	3·63	22	25	30	27	3·14
Captains	32	38	4·22	3·47	3·89	32	38	39	42	2·82
Majors	41	46	3·67	4·02	3·88	41	50	49	54	2·81
Lieut.-Colonels	45	58	4·23	4·88	4·67	45	55	54	57	3·77
Colonels & upwds.	51	60	5·59	3·80	4·19	52	72	65	67	4·68

The average age of entering each rank by promotion, in our table, scarcely differs at all from the ages given by Mr. Davies in his Second Report in 1845, which he obtained by extracting from Dodwell and Miles' List the names of 1,000 officers, calculating their average age of promotion, and assuming 19 as the average age of joining the service.

As the rate of promotion in each rank is an important question in almost all the Indian Military Funds, I here subjoin the original facts and the percentages in the two periods 1808 to 1822 and 1823 to 1857, calculated upon the mean number living in the middle of the year. The former period would afford the most correct conclusions at advanced ages, since only 16 per cent. of all who

entered were living at the close of the observations, and all the rest are accounted for under the heads of died, withdrawn, promoted. In the second period of course a great number of young officers must be still living in the junior ranks, not having been in the service long enough to reach the higher grades. The great diminution in the rate of mortality in each rank in the second period will also tend to retard the rate of promotion, and account, in some degree, for the mean age of the higher ranks being greater now than by Mr. Davies' estimate. (See Table No. III., p. 14.)

I do not propose to give further extracts from the tables in our Report, but to proceed to some new data, which were obtained in the course of the investigation, on the conjugal condition of the members of the Fund.

When the List A was completed as far as possible from the documents in our possession, the tables of mortality were formed from them, without waiting for the observations to be completed on the lives of the wives, widows, and children. But in the course of filling in the latter lists facts were occasionally found by which the male life observations could be corrected. Some officers, for instance, who were considered as withdrawn, because they did not appear amongst the deaths nor afterwards amongst the living to 1858, were found to have left widows or children—both, or the latter only. If so, the date of their death was ascertained by the date when their families came on the Fund. If they left wives, their dates of death were inserted in the married list; if children only, in the widowers' list. The tables which we have now to consider are such as have been thus finally corrected, and they differ from our first observations by containing a greater number of deaths and fewer withdrawals, but not so as materially to affect the graduated table of mortality. They are divided into the two periods of 1808 to 1822 and 1823 to 1857, for the reasons before specified, and also to throw light on the much debated question to what extent the mortality has diminished in India of late years, and also to compare the other events on which all original information is so desirable. I have thought it unnecessary to give the observations for every age, because in several cases where the age or date of the event was unknown, they have been distributed in proportion to those known. Whilst, therefore, we could not guarantee the precise accuracy of the numbers at every single age, there is reason to think, that, in quinquennial groups of ages, they very nearly indeed accord with the actual truth. They are, therefore, given in the summary of ages 15—20—25, &c.

No. III.—*Table showing the Total Number of Officers who entered the Madras Military Fund in the two Periods* 1808 *to* 1822 *and* 1823 *to* 1857, *in each Rank, and the Total Number who Lived, Died, Withdrew, were Promoted, or Living to* 1858, *in each Rank; also the Proportions per Cent.*

1808 to 1822.	Entered.		Lived.	Died.	With-drew.	Living, 1858.	Pro-moted.	Per Cent. of Entered Fund or Rank.				Proportion per Cent. to Lived.				Mean Duration in each Rank.	Actual Years of Life.	Proportion of Years of Life to Total.
	Fund.	Rank.						Died.	With-drew.	Living to 1858.	Pro-moted.	Died.	With-drew.	Pro-moted.	Total.			
Ensigns	759	..	3,022	101	26	1	631	13·31	3·43	·13	83·13	4·46	1·15	27·88	33·49	2·98	2263·5	6·63
Lieutenants	873	631	13,398	453	86	5	960	30·12	5·72	·33	63·83	3·81	·72	8·07	12·60	7·91	11896·5	34·86
Captains	167	960	11,567	391	107	80	549	34·70	9·49	7·10	48·71	3·73	1·02	5·24	9·99	9 30	10480·	30·71
Majors	53	549	4,651	119	46	88	349	19·77	7·64	14·62	57·97	2·91	1·12	8·53	12·56	6·80	4093·	11·99
Lieut.-Colonels	31	349	3,821	133	27	75	145	35·	7·10	19·74	38·16	3·82	·78	4·17	8·77	9·15	3478·5	10·19
Colonels & upwds.	10	145	2,047	90	13	52	..	58·06	8·39	33·55	..	4·69	·68	..	5·37	12·37	1918·	5·62
Total	1,893	2,634	38,506	1,287	305	301	2,634	28·43	6·74	6·65	58·18	3·77	·89	7·72	12·38	7·54	34129·5	100·
								Of 100	who Ent	ered Fu	nd only					In Fund		
1823 to 1857.								67·99	16·11	15·90						18·03		
Ensigns	2,778	..	12,587	312	48	221	2,197	11·23	1·73	7·95	79·09	3·15	·48	22·15	25·78	3·57	9919·5	26·71
Lieutenants	290	2,197	20,616	505	127	879	976	20·31	5·11	35·34	39·24	2·72	·68	5·26	8·66	7·47	18568·5	49·99
Captains	13	976	8,440	124	67	670	128	12·54	6·77	67·75	12·94	1·59	·86	1·64	4·09	7·87	7786·	20·96
Majors	2	128	689	14	6	71	39	10·76	4·62	54·62	30·	2·35	1·01	6·56	9·92	4·57	594·5	1·60
Lieut.-Colonels	3	39	234	6	2	28	6	14·29	4·76	66·67	14·29	2·91	·97	2·91	6·79	4·90	206·	·55
Colonels & upwds.	..	6	74	3	..	3	..	50·	..	50·	..	4·32	..	..	4·32	11·58	69·5	·19
Total	3,086	3,346	42,640	964	250	1,872	3,346	14·99	3·89	29·10	52·02	2·60	·67	9·01	12·28	5·77	37144·	100·
								Of 100	who Ent	ered Fu	nd only					In Fund		
Total.								31·24	8·10	60·66						12·04		
Ensigns	3,537	..	15,609	413	74	222	2,828	11·68	2·09	6·28	79·95	3·39	·61	23·21	27·21	3·44	12183·	17·09
Lieutenants	1,163	2,828	34,014	958	213	884	1,936	24·	5·34	22·15	48·51	3·14	·70	6·36	10·20	7·63	30465·	42·74
Captains	180	1,936	20,007	515	174	750	677	24·34	8·22	35·45	31·99	2·82	·95	3·71	7·48	8·63	18266·	25·63
Majors	55	677	5,340	133	52	159	388	18·17	7·10	21·72	53·01	2·84	1·11	8·28	12·23	6·40	4687·5	6·58
Lieut.-Colonels	34	388	4,055	139	29	103	151	32·94	6·87	24·41	35·78	3·77	·79	4·10	8·66	8·73	3684·5	5·17
Colonels & upwds.	10	151	2,121	93	13	55	..	57·76	8·08	34·16	..	3·68	·65	..	5·33	12·34	1987·5	2·79
Total	4,979	5,980	81,146	2,251	555	2,173	5,980	20·54	5·06	19·83	54·57	3·16	·78	8·39	12·33	6·51	71273·5	100·
								Of 100	who Ent	ered Fu	nd only					In Fund		
								45·21	11·15	43·64						14·32		

I wish to draw attention here to the misfortune which all investigators of statistical tables of this kind lie under, for want of some definite principles of arranging and classifying facts. I regret it the more as in this case we could not accurately compare the results of these tables with those of preceding writers without recomputing the percentages at a considerable cost of time and labour, and we shall have to be satisfied with making an allowance for slight difference of ages. I have followed the classification of ages as given in the Registrar-General's Reports, and which Dr. Farr, in conjunction also with all those Government delegates from foreign countries who have attended the Statistical Congresses, has for some years introduced into the public mortality statistics of this country. But Mr. Neison's quinquennial groups are generally 21 to 25, 26 to 30, &c., differing one year of age from the former. Again, it is convenient to have the percentage rates of mortality, marriage, &c., computed upon 100 living in the middle of the year of age, by deducting from the living under observation half of all who entered or left from any cause, and ascertaining the proportion of deaths, &c., thereto. The number left would then be common to all when several events, such as mortality, withdrawal, retirement or marriage, have to be compared together.* I mention this incidentally because the members of the Institute are peculiarly interested in following an uniform system in such inquiries.

The totals of the two periods are—

No. IV.—*Summary of Facts from the Experience of the Madras Military Fund.*

	Entered.	Lived.	Exposed to Risk.	Died.	Withdrew.	Retired.	Married.	Living, 1858.	Total.
Bachelors—									
Entered, 1808 to 1822	1,806	21,241	19442·	824	156	208	604	14	1,806
Ditto Retired	208	1,890	1700·5	54	86	..	31	37	208
Entered, 1823 to 1857	3,099	28,627	25997·	744	143	172	1,102	938	3,099
Ditto Retired	172	940	809·	28	37	..	25	82	172
Active	4,905	52,698	47948·5	1,650	422	380	1,762	1,071	4,905
Retired	380	..	..	..	..	..	..	..	380
	5,285								5,285

* The usual plan is to compare them with 100 entering upon a year of life, which requires a different initial number in each class of facts.

	Entered.	Lived.	Exposed to Risk.	Died.	Withdrew.	Retired.	Became Widowers.	Living, 1858.	Total.
Married Officers, 1808 to 1822—									
Entered as married ..	117								
By marriage, 1st time	635	..	..	..	..	..	165		
2nd „	94	..	..	..	..	..	15		
3rd „	9	..	..	..	..	..	1		
4th „	1	..	..	..	..	..	1		
	856	10,338	9534·	364	9	197	182	104	856
Ditto retired	197								
Married after retirement, 1st time	12								
2nd „	1								
	210	3,161	3009·5	69	8	..	16	117	210
1823 to 1857—									
Entered by marriage, 1st time	1,191	..	..	..	..	..	170		
2nd „	85	..	..	..	..	..	12		
3rd „	7	..	..	..	..	..	1		
	1,283	10,202	9274·	197	16	177	183	710	1,283
Ditto retired	177								
Married after retirement, 1st time	7								
2nd „	6								
3rd „	2								
	192	1,469	1351·5	25	1	..	17	149	192
Active	2,139	25,170	23169·	655	34	374	398	1,080	2,167
Retired ....374 Married after retirement, 28	402	..	..	..	..	..	..	..	374
	2,541								2,541
							Re mar-ried.		
Widowers, 1808 to 1822—									
1st	165	..	..	..	..	..	79		
2nd	15	..	..	..	..	..	7		
3rd	1	..	..	..	..	..	1		
4th	1								
	182	1,295	1120·5	53	8	19	87	15	182
Ditto retired	19								
Became widowers after retirement	16								
	35	162	131·5	7	4	..	15	9	35
Ditto, 1823 to 1857—									
1st time	170	..	..	..	..	..	85		
2nd „	12	..	..	..	..	..	7		
3rd „	1								
	183	976	815·5	28	5	13	92	45	183
Ditto retired	13								
Became widowers after retirement	17								
	30	90	65·5	7	..	..	12	11	30
Married who became widowers	398	2,523	2133·	95	17	32	206	80	430
Widowers retired	32								
	430								

The total number of officers who entered as bachelors is given as 4,905; and in the first period, 117 officers appear to have been married at the time of entry. A few, mostly clergymen, who entered as married, are included in the 1,191 first marriages of the second period, making altogether 5,104 officers accounted for in these tables. Of these, 2,400 died, 473 withdrew, and 2,231 were living at the close of the observations. From these tables the percentages have been calculated, as I have described, on the number exposed to risk in the middle of each quinquennial period of age, by deducting from the living half of all who entered or left, from any cause, at these ages.

Rate of mortality in two periods.

The most important question is the rate of mortality as compared in the two periods. The result strongly confirms the views which Mr. Neison and others have expressed on this subject. The number exposed to risk in the first period, 1808 to 1822, was 34,938; the rate of mortality, 3·92 per cent.; the rate of withdrawal, ·78 per cent. In the second period, the number exposed to risk was 38,313; the rate of mortality, 2·69 per cent.; and of withdrawal, ·53 per cent. By Mr. Davies' table, deduced from the officers in each rank from 1808 to 1836, the rate was 3·66 per cent., being a small fraction lower than what he had observed in the Bombay Military Fund. The same marked difference occurs at every quinquennial period of age, the rate of mortality diminishing at each quinquennium of age from 25 to 35, when it is less than half the rate of those officers who entered in the early period—being 2·05, as compared with 4·19 per cent.

That this diminution in the rate of mortality of late years is not accidental, may be seen by examining the table of percentage. In every class, at almost every group of ages of officers in active service, the percentage is less. Amongst retired officers, the numbers are too few at many ages to allow of this minute observation; nor does the question so much concern them, except as showing the permanent effects of an Indian climate on the constitution after return to their native country. In the following table I have compared together the percentages of mortality in two periods by the present tables, by Mr. Davies' table of the same Fund to 1840, by Mr. Neison's table for the Madras army, which he gives as corrected from the Patronage Books of the India House (but which must be allowed for as the average ages taken one year older than ours), and his own observations on the Bengal army,

(1) excluding retired and (2) including retired officers, which I have recalculated on 100 living in the middle of the year. I have also added the percentage from Dr. Farr's original observations for healthy districts—the deaths for 5 years, 1849 to 1853, being taken on the population of 1851. This table, or that of Messrs. Bailey and Day's observations from the British peerage, would, I apprehend, more nearly represent than any others the normal mortality of the class of officers of the Indian army, if they had always been living in this country, and not exposed to the climates of India.

No. V.—*Comparisons of the Rate of Mortality.*

Quinquennial Ages.	Madras Military Fund.				Neison.				British Peerage. Bailey and Day.	Farr, Healthy Life, Graduated. Males.
	Entered.				Madras Army.		Bengal Army, 1800 to 1847.			
	1808 to 1822.	1823 to 1857.	1808 to 1857.	1808 to 1848. Davies.	1800 to 1819.	1820 to 1847.	(1) Active only.	(2) Including Retired.		
15 –	3·81	2·42	2·78	1·45	2·41	1·51	1·21	1·20	·66	·53
20 –	3·90	3·03	3·30	2·72	3·65	3·12	2·25	2·22	1·11	·74
25 –	4·05	2·73	3·25	3·06	4·20	2·46	2·48	2·37	1·00	·80
30 –	4·11	2·53	3·27	3·66	3·94	2·99	2·79	2·65	·86	·84
35 –	4·19	2·05	3·22	3·70	4·20	2·44	2·95	2·67	·89	·89
40 –	3·56	2·54	3·16	4·05	3·40	3·58	2·94	2·58	1·10	·99
45 –	3·74	2·68	3·40	4·14	3·89	1·25	3·52	2·97	1·38	1·16
50 –	2·90	3·22	2·95	3·74	3·43	..	3·45	2·25	1·63	1·44
55 –	3·29	·99	3·15	4·09	4·62	..	3·90	2·57	1·92	1·85
60 –	3·41	8·16	3·63	5·73	5·09	..	4·03	3·08	2·88	2·89
65 –	5·50	6·90	5·53	6·16	..	..	..	1·53	4·71	4·44
70 –	7·82	..	7·68	3·16	..	..	..	..	7·08	6·79
75 –	13·79	..	13·79	10·	..	..	..	..	11·03	10·37
80 –	17·54	..	17·54	20·	..	..	..	..	17·06	15·66
85 –	..	..	..	100·	..	..	...	..	33·44	23·03
90 –	..	..	..	..	..	..	..	..	52·17	
Total	3·92	2·69	3·28	3·28	3·64	2·56	2·43	2·30	1·80	

Another interesting question, on which the present observations throw light, is the rate of retirement from the Madras army, and the rate of mortality, as well as the rate of withdrawal and marriage after retirement amongst bachelors and widowers. On the whole experience of the Fund, amongst bachelors, the rate of retirement from active service steadily increases from 15 up to the age of 55—60, when it reaches its maximum, 5·61 per cent. Amongst married men, the rate of retirement is higher than that of bachelors, up to age 30—35, when it is nearly the same—married 1·22, and bachelors 1·23, per cent. It again nearly agrees at 45—50,

married 5·49, and bachelors 5·24, per cent.; after which it diminishes to 2·38 at 55—60. In both cases the retirements appear to cease after 60. Amongst widowers, the rate of retirement is somewhat more irregular. It begins at 25, and continues till after 70, but reaches a maximum between 45 and 50, when it is 4·16 per cent.

Amongst retired officers, the rate of mortality in each class is always highest at the younger ages, and diminishes with great regularity to the ages 50 to 55, or, in the case of widowers, to 55 to 60; at those ages, it is as low as 1·77 for bachelors, and 1·40 for married men, and 2·41 for widowers. This is a singular fact, but the numbers, though not great, are sufficient to give confidence in the average results, the more especially as it is almost entirely confirmed, as a general rule, when the facts are examined in the two periods into which the whole observations are divided.

The numbers exposed to risk on the retired list, are, bachelors, 2,510, deaths, 82; married, 4,361, deaths, 94; widowers, 197, deaths, 14; total, 7,068 years of life, 190 deaths, the total mortality being 2·69 per cent.

It should be particularly noticed, that the retirements do not include those of officers of the rank of Colonel and upwards, as no definite facts of this kind were given at their respective ages. By a computation on the average of the 20 years, 1840 to 1859 inclusive, it appeared that there were about 53 officers of the rank of Colonels and upwards always in Europe, to 19 in India, or about 73½ per cent.

Mr. Davies, in his second Report, gives a table deduced from Dodwell and Miles' List, showing, as nearly as he could ascertain it, the proportion who retire in every rank, from which he computed a table, showing, on the average age of promotion being assumed, how many would be left alive on attaining the next rank, and how many would be gone off by retirement before that time. He computed it

Below the rank of Captain . . .	10 per cent.
In the rank of Captain	18 ,,
,, Major	24 ,,
,, Lieutenant-Colonel . .	50 ,,

and that only $\frac{27}{100}$th of those who survive to the age of 51 are promoted to the rank of Colonel.

A table, similar to the present, at different ages may be deduced from Mr. Neison's summary of the two tables of Bengal army, 1800 to 1847, by deducting the first from the second, and computing the percentage of mortality on the difference. The totals

are, years of life, 88,590—77,979=10,611 years of life, and 2,019—1,874=145 deaths, or 1·37 per cent. But this appears to continue the observations till the deaths of the retired members, and to make no allowance for withdrawals from the Fund, which, in the present observations, were most numerous amongst bachelors immediately after retirement.

Several other deductions of considerable interest to similar Funds might be drawn from the table of percentages, as, for instance, the withdrawal of members, by which the subscriptions and liabilities cease. Upon examination, it will be seen that these are almost exclusively confined to bachelors, and widowers without children. The rate per cent. on the whole period for bachelors was ·88 per cent, and for widowers ·80 per cent.; both being nearly at a maximum at the ages 60—65. But the rate for married officers was only ·15 per cent.; a result which, to a certain extent, might have been anticipated, although not hitherto acted upon. It led us to the conclusion, that we were justified in assuming that the subscriptions and liabilities for married men ought to be valued, not for the joint duration of the lives of their wives and their own, but for the whole duration of their lives, provided a reserve was made for the probabilities of second wives and families.

I must conclude, however, this part of the subject, by drawing attention to the rates of marriage amongst bachelors and widowers, and that of married men becoming widowers, which are shown in full detail for each class at quinquennial periods of age, and for the two separate periods under review.

For comparison, I have referred to Mr. Archibald Day's excellent paper, read before this Institute 24th March, 1862, and printed in vol. x., part 4, "On the Statistics of Marriages among the Families of the Peerage." His observations extend for a period of 100 years preceding 31st December, 1855, and comprise 2,721 bachelors; of whom 1,540 had married, 445 died unmarried, and 736 were living 31st December, 1855, still unmarried. The widowers were 945; of whom 438 had married, 368 died, and 139 were still living, to the same date, as widowers. The years of life observed were 42,383·5 for bachelors, and 7,888·5 for widowers.

The present observations comprise 4,905 bachelors, on active service; of whom 1,568 had died, 299 withdrew, 380 retired, and 1,706 married, and 952 were living as bachelors to 1858. The years observed were 45,439.

Of the retired 380, 82 had died, 123 withdrew, 56 had married, and 119 were living to 1858. Years of life observed, 2,510.

Of widowers, our tables give, either by first or subsequent marriages dissolved by death, 365; of whom 81 died, 13 withdrew, 32 retired, 179 remarried once or more times, and 60 still living as widowers. Years of life observed, 1,936.

Besides the 32 retired widowers, we find 33 who became widowers after retirement, making together 65; of whom 14 died, 4 withdrew, 27 remarried, and 20 were living to 1858. Years of life observed, 197.

We thus appear to have ample means for making a fair comparison, except perhaps for the retired, when, from the paucity of numbers, the percentages are irregular.

No. VI.—*Comparisons of the Rate of Marriage.*

Age.	Bachelors, Rate of Marriage per Cent.				Widowers, Rate of Marriage per Cent.			
	Madras Fund, 1808 to 1857.		Day, Peerage.	General Population.	Madras Fund, 1808 to 1857.		Day, Peerage.	General Population.
	Active.	Retired.			Active.	Retired.		
15 –	·17	..	·19	·46				
20 –	2·61	..	4·21	11·21	13·56	..	17·86	30·77
25 –	4·82	·60	7·70	12·21	11·45	..	14·91	35·79
30 –	6·26	3·48	7·14	7·85	13·19	28·56	12·49	28·63
35 –	5·40	2·67	5·47	4·56	8·66	40·00	10·46	20·31
40 –	4·06	2·67	3·95	2·80	9·90	17·39	9·95	14·08
45 –	3·60	2·94	1·98	1·45	9·01	16·67	7·72	8·86
50 –	4·85	1·18	1·07	·71	10·98	16·50	5·91	5·71
55 –	3·49	1·51	1·05	·35	4·35	7·23	4·25	3·20
60 –	..	1·20	..	·15	3·90	..	3·27	1·75
65 –	..	..	..	·05	..	..	2·17	·86
70 –	..	..	..	·03	3·70	..	1·88	·32
75 –	..	..	..	·06	..	..	·83	·10
	3·75	2·23	3·63	..	9·25	13·71	5·55	

Mr. Day remarks, that the marriages amongst the aristocracy, as compared with the general population, computed from the Returns for 1851 on the population as it appeared by the census in that year, take place at a much later period of life amongst bachelors, and in a still more marked degree amongst widowers. This peculiarity is even much more strongly marked amongst officers in India, and even when retired, and in about the same degree as in the peerage amongst widowers. The highest marriage rate per cent. given by Mr. Day amongst bachelors is at ages 25—30, 7·70 per cent.; in the Madras table, at 30—35, 6·26 per cent.; in 35—40, the observations are almost exactly alike; and

at 45 and upwards, the Madras military rate is much in excess even of the English peerage.

By the Madras table, below 30, the marriage rate amongst widowers is about 25 per cent. less than that shown by Mr. Day. Above that age it nearly coincides at several points, except at 50—55, when it is almost double both the peerage rate and that of the general population.

This question is a very important one, as affecting the valuation of all the Indian Funds, if the observations generally apply; for we shall see by the next table that the tendency to marry wives younger than themselves increases in proportion as marriage takes place at later periods of life.

Before proceeding to this table, I will merely state that the rate of marriage has considerably increased in the second periods of the Fund, from 1823 to 1857, both amongst bachelors and widowers; and that amongst the former, after the age of 30, and amongst the latter, for all the ages under observation, it is in almost all cases higher than the rate amongst the English aristocracy.

The table I now refer to shows, for 590 marriages in the first period, and 1,178 in the second, in all which cases the ages both of husband and wife were given, the total number of officers at different ages marrying wives of different ages, and distinguishing whether first, second, third, or fourth wife. By leaving out a few, who entered the Fund as married men, I have combined the two tables into one, comprising 1,526 first marriages, 164 second, 17 third, and 1 fourth marriage.

The following tables show, out of 100 officers, bachelors, marrying in each quinquennial period of age, the proportion marrying wives of equal ages, or older or younger than themselves, within equal differences of 5 years of age, and similar proportions for 100 widowers marrying at the same quinquennial period of age :—

No. VII., *showing, of* 100 *Bachelors who Marry in each Quinquennial Period of Age, the Proportion who Marry Wives of different Quinquennial Ages, and the same for Widowers.*

Husband's Age.	Bachelors. Wife's Age. 12 –	15 –	20 –	25 –	30 –	35 –	40 –	45 –	50 – 55	Total.	Average Age of Wife.	Difference.
15 –	..	50·0	41·7	8·3	..	..	..	..	..	·8	20·4	+ 2·9
20 –	·8	39·8	43·8	13·6	1·4	·6	..	..	..	23·2	21·3	– 1·2
25 –	·4	31·3	42·7	21·4	3·2	·8	·2	..	..	32·5	18·4	– 9·1
30 –	..	25·5	42·6	21·1	9·2	·8	·8	..	..	24·2	23·5	– 9·0
35 –	·6	19·1	34·6	28·4	11·1	5·6	·6	..	..	10·6	24·9	– 12·6
40 –	..	16·9	33·8	28·2	12·7	8·4	..	..	..	4·6	25·6	– 16·9
45 –	..	18·2	30·3	9·1	27·3	15·1	..	..	..	2·2	27·0	– 20·5
50 –	..	15·8	21·1	21·0	15·8	15·8	10·5	..	..	1·2	28·8	– 23·7
55 –	..	..	22·2	11·1	..	44·5	11·1	..	11·1	·6	35·3	– 22·2
60 –	..	..	..	.	..	100·0	..	..	..	·1	37·5	– 25·0
	·4	29·4	40·9	20·1	6·2	2·4	·5	..	·1	100·	23·1	– 7·1
Average Age of Husband	26·7	28·4	29·5	31·0	35·1	41·4	40·6	..	57·5	..	30·2	
Difference.	13·2	10·9	7·0	3·5	2·6	3·9	– 1·9	..	5·	..	7·1	
Husband's Age.	Widowers.											
20 –	..	..	33·3	33·3	33·3	..	..	..	..	1·6	27·5	+ 5·0
25 –	..	16·7	58·3	25·0	..	..	..	..	..	6·6	23·0	– 4·5
30 –	..	25·7	51·4	8·6	14·3	..	..	..	..	19·2	23·1	– 9·4
35 –	..	22·5	32·5	20·0	15·0	7·5	..	2·5	..	22·0	25·1	– 12·4
40 –	..	13·5	40·6	27·0	10·8	..	2·7	5·4	..	20·3	26·1	– 16·4
45 –	..	9·1	27·3	9·1	31·8	18·2	4·5	..	..	12·1	29·3	– 18·2
50 –	..	..	9·5	19·1	33·3	14·3	9·5	9·5	4·8	11·6	34·6	– 17·9
55 –	..	..	33·3	..	16·7	33·3	..	..	16·7	3·3	34·1	– 23·4
60 –	..	25·0	..	..	75·0	..	..	..	..	2·2	28·8	– 33·7
65 – 70 –	..	..	..	.	50·0	..	..	..	50·0	1·1	42·5	– 30·0
Total..	..	15·4	35·2	17·0	19·2	6·6	2·2	2·8	1·6	100·	27·1	– 14·1
Average Age of Husband	..	42·2	38·0	39·8	45·6	47·9	48·8	45·5	60·8	.	41·2	
Difference.	..	24·7	15·5	12·3	13·1	10·4	6·3	– 2·0	8·3	..	+ 14·1	

These tables well deserve a careful examination. They show, in a very marked manner, that the later the age at which the officer marries, the greater is the discrepancy of age between himself and his wife.

The average age at which bachelors marry appears to be about 30, and of their wives 23, a difference of 7 years. Under 20, the bachelors marry wives about 3 years younger than themselves; but from 20, the discrepancy in favour of a younger wife steadily increases each 5 years, till at 60—65 it is 25 years younger.

For widowers, the average age of marriage appears to be about 41, and their wives 27, a difference of 14 years. Under 25, in widowers' marriages, the average age of the wife is 5 years older than her husband, but afterwards the discrepancy of age in favour of a young wife increases, till it is higher than that of bachelors, being from 30 to 34 years, when widowers marry at 60 and upwards.

The lowest horizontal line shows the average age of the husband when the average age of the wife is the mean of the quinquennial ages at the top of the column; and it will be seen that, on marrying bachelors, the greatest discrepancy of age is when the wives are married young, which gradually diminishes, till, after 40, they marry men younger than themselves. But the extremes are not so great as in male life. Thus, for wives marrying under 15, the average age of the husband is 13 years greater, and the difference gradually diminishes, till, from 40 to 50, the husband's age averages two years younger than the wife. After 50, there is but one case, which may be considered exceptional.

On marrying widowers the difference is still greater, beginning with 25 years' difference of age, when the wife is from 15 to 20 at the date of the marriage, and diminishing regularly in each quinquennial period of age, till, at 45 to 50, they marry widowers two years younger than themselves.

The materials exist for a similar comparison with the general population of this country, and with the Bengal Fund, from a table given in Mr. Neison's Report of 1849, but the marriages in the last case amount only to 875 in number, and it is not clear whether they are only first, or include second, marriages.

In the second part of this paper, I propose to make some remarks on the original observations which I have collected, as to the mortality amongst wives, widows, and children, both male and female, and the rate of marriage amongst daughters and remarriage amongst widows, both in India and after retirement; and, in a

third part, to bring together comparisons of all these subjects from the other Presidencies, and from previous Reports.

I will merely conclude this part of the subject, by expressing my sincere conviction, that, as regards the rate of mortality, a great change for the better has been for many years going on in those vast territories of India, to which attention is now so earnestly directed for the development of their natural resources, and the improvement of the social condition of their millions of population. We are happy in discovering that, with ordinary precaution, the energies of this country may be safely brought to bear upon the social, moral, and commercial progress of those wide dominions; and it is consolatory to reflect, that we may, at no greater risk of life than is daily incurred in the exploration of the mineral wealth of this country, or in the navigation of her coasts, fulfil our solemn responsibilities to that large portion of the human race, whose destinies Providence has, for some grand purpose, entrusted to our care.

EXPERIENCE OF THE MADRAS MILITARY FUND, FROM 1808 TO 1857.

BACHELORS.—B. *Officers who entered as Bachelors, from* 1808 *to* 1822 *inclusive.*

Quinquennial Ages.	1. Active.								2. Retired.						
	Entered.	Lived.	Died.	Withdrew.	Retired.	Married.	Living, 1858.	Total.	Entered.	Lived.	Died.	Withdrew.	Married.	Living, 1858.	Total.
14–	762	1,639	47	6	..	..	..	53							
20–	646	5,238	186	46	9	84	..	325	9	22	2	1	..	..	3
25–	260	5,213	212	38	20	155	..	425	20	74	4	1	..	..	5
30–	77	3,790	144	22	47	173	..	386	47	195	7	12	3	..	22
35–	34	2,363	101	22	30	105	..	258	30	281	8	10	5	..	23
40–	13	1,365	56	11	49	35	..	151	49	313	7	30	7	..	44
45–	10	773	37	4	33	28	..	102	33	335	8	17	8	..	33
50–	3	383	15	3	17	18	3	56	17	311	5	7	4	9	25
55–	1	182	9	1	3	6	4	23	3	208	8	4	3	14	29
60–	..	118	5	1	..	..	1	7	..	88	4	4	1	3	12
65–	..	92	2	1	..	..	..	3	..	44	1	..	..	7	8
70–	..	59	6	1	..	..	4	11	..	16	..	..	..	2	2
75–	..	20	3	..	..	..	1	4	..	3	..	..	..	2	2
80–85	..	6	1	..	..	..	1	2							
Total	1,806	21,241	824	156	208	604	14	1,806	208	1,890	54	86	31	37	208

B. Officers who entered as Bachelors, from 1823 *to* 1857 *inclusive.*

Quinquennial Ages.	3. Active.								4. Retired.						
	Entered.	Lived.	Died.	Withdrew.	Retired.	Married.	Living, 1858.	Total.	Entered.	Lived.	Died.	Withdrew.	Married.	Living, 1858.	Total.
14–	2,159	4,677	86	7	1	8	158	260	1	1					
20–	894	11,349	321	67	21	315	308	1,032	21	45	5	3	..	1	9
25–	29	7,045	192	45	49	402	206	894	49	142	6	14	1	7	28
30–	12	3,382	85	16	36	249	145	531	36	218	12	11	9	8	40
35–	4	1,336	27	7	25	83	70	212	25	176	1	5	6	15	27
40–	1	585	26	1	20	39	25	111	20	160	2	4	4	9	19
45–	..	211	3	..	15	5	15	38	15	151	1	..	5	21	27
50–55	..	42	4	..	5	1	11	21	5	47	1	..	..	21	22
Total	3,099	28,627	744	143	172	1,102	938	3,099	172	940	28	37	25	82	172

B. Officers who entered as Bachelors, from 1808 *to* 1857 *inclusive.*

	5. Active.								6. Retired.						
14–	2,921	6,316	133	13	1	8	158	313	1	1					
20–	1,540	16,587	507	113	30	399	308	1,357	30	67	7	4	..	1	12
25–	289	12,258	404	83	69	557	206	1,319	69	216	10	15	1	7	33
30–	89	7,172	229	38	83	422	145	917	83	413	19	23	12	8	62
35–	38	3,699	128	29	55	188	70	470	55	457	9	15	11	15	50
40–	14	1,950	82	12	69	74	25	262	69	473	9	34	11	9	63
45–	10	984	40	4	48	33	15	140	48	486	9	17	13	21	60
50–	3	425	19	3	22	19	14	77	22	358	6	7	4	30	47
55–	1	182	9	1	3	6	4	23	3	208	8	4	3	14	29
60–	..	118	5	1	..	..	1	7	..	88	4	4	1	3	12
65–	..	92	2	1	..	..	..	3	..	44	1	..	..	7	8
70–	..	59	6	1	..	..	4	11	..	16	..	..	..	2	2
75–	..	20	3	..	..	..	1	4	..	3	..	..	..	2	2
80–85	..	6	1	..	..	..	1	2							
Total	4,905	49,868	1,568	299	380	1,706	952	4,905	380	2,830	82	123	56	119	380

MARRIED OFFICERS.—M. *Officers who entered, from* 1808 *to* 1822, *either as Married or who afterwards Married.*

Age.	No. 1. Active List.																		No. 2. Retired List.								
	Entered.						Total entered.	Lived.	Died.	Withdrew.	Retired.	Became Widowers.					Living, 1858.	Total.	Entered.			Lived.	Died.	Withdrew.	Became Widowers.	Living, 1858.	Total.
	Fund as Married.	Married List.																	Married after Retirement.	From Active List.	Both.						
		1st time.	2nd.	3rd.	4th.	Total.						1st time.	2nd.	3rd.	4th.	Together.											
15–	..	2	..	..	..	2	2	3																			
20–	12	77	..	..	..	77	89	196	3	..	1	5	..	..	..	5	..	9	..	1	1	5					
25–	32	170	5	..	..	175	207	940	17	..	7	14	..	..	..	14	..	38	..	7	7	24					
30–	28	186	10	1	..	197	225	1,766	67	..	17	25	3	..	..	28	..	112	2	17	19	95	4	..	..	..	4
35–	20	103	13	1	..	117	137	1,983	74	..	17	41	2	..	..	43	..	134	1[2]	17	18	165	2	..	1	..	3
40–	9	33	20	2	..	55	64	1,790	55	1	50	29	3	..	..	32	..	138	4	50	54	314	4	2	..	..	6
45–	10	29	16	1	..	46	56	1,361	51	..	62	21	3	1	..	25	..	138	2	62	64	594	13	..	1	..	14
50–	3	25	19	2	1	47	50	982	35	3	30	14	1	..	..	15	41	124	2	30	32	742	9	1	5	31	46
55–	2	9	6	1	..	16	18	565	18	3	13	7	1	..	1	9	30	73	2	13	15	561	12	2	4	33	51
60–	1	1	4	..	..	5	6	350	13	2	..	5	1	..	..	6	10	31	..	..	..	379	9	3	1	14	27
65–	..	..	..	..	..	..	..	226	13	..	..	2	1	..	..	3	9	25	..	..	..	207	11	..	4	24	39
70–	..	..	1	1	..	2	2	118	9	..	..	2	..	..	..	2	9	20	..	..	..	58	4	..	..	11	15
75–	..	..	..	..	..	..	..	45	6	..	..	..	..	..	..	..	4	10	..	..	..	9	1	..	..	3	4
80–	..	..	..	..	..	..	..	13	3	..	..	..	..	..	..	..	1	4	..	..	..	5					
85–	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	1	1
Total	117	635	94	9	1	739	856	10,338	364	9	197	165	15	1	1	182	104	856	13	197	210	3,161	69	8	16	117	210

M. *Officers who entered, from* 1823 *to* 1857, *either as Married or who afterwards Married.*

Age.	No. 3. Active List.														No. 4. Retired List.								
	Entered.				Lived.	Died.	Withdrew.	Retired.	Became Widowers.				Living, 1858.	Total.	Entered.			Lived.	Died.	Withdrew.	Became Widowers.	Living, 1858.	Total.
	1st time.	2nd.	3rd.	Total.					1st time.	2nd.	3rd.	Total.			Married after Retirement.	From Active List.	Total.						
15–	12	..	..	12	14	..	..	..	1	..	..	1	..	1									
20–	331	5	..	336	794	13	3	6	17	..	..	17	20	59	..	6	6	10	..	..	..	2	2
25–	428	8	1	437	2,363	40	7	19	42	1	..	43	129	238	..	19	19	59	3	..	..	..	3
30–	261	25	..	286	2,721	55	4	33	52	..	..	52	188	332	4	33	37	189	2	..	1	10	13
35–	99	28	..	127	2,062	39	2	28	35	4	..	39	156	264	4^2	28	32	263	6	..	3	15	24
40–	48	11	4	63	1,334	24	..	43	18	4	1	23	95	185	1	43	44	348	5	1	5	20	31
45–	10	7	2	19	657	22	..	41	5	3	..	8	72	143	2^2 1	41	44	376	4	..	2	51	57
50–	2	1	..	3	167	1	..	6	..	..	..	..	41	48	2^3 1	6	9	145	3	..	4	43	50
55–	..	..	..	..	56	1	..	1	..	..	..	..	4	6	..	1	1	45	..	..	2	4	6
60–	..	..	..	..	23	2	..	..	..	..	..	..	3	5	..	..	..	25	1	..	..	2	3
65–	..	..	..	..	6	..	..	..	..	..	..	..	1	1	..	..	..	9	1	..	..	2	3
70–	..	..	..	..	5	..	..	..	..	..	..	..	1	1									
Total	1,191	85	7	1,283	10,202	197	16	177	170	12	1	183	710	1,283	15	177	192	1,469	25	1	17	149	192

M. *Officers who entered, from* 1808 *to* 1857 *inclusive, either as Married or who afterwards Married.*

Age.	No. 5. Active List.																		No. 6. Retired List.								
	Entered.						Total entered.	Lived.	Died.	Withdrew.	Retired.	Became Widowers.					Living, 1858.	Total.	Entered.			Lived.	Died.	Withdrew.	Became Widowers.	Living, 1858.	Total.
	Fund as Married.	Married List.																	Married after Retirement.	From Active List.	Both.						
		1st time.	2nd.	3rd.	4th.	Total.						1st time.	2nd.	3rd.	4th.	Together.											
15–	..	14	..	..	..	14	14	17	..	..	..	1	..	..	..	1	..	1									
20–	12	408	5	..	..	413	425	990	16	3	7	22	..	..	..	22	20	68	..	7	7	15	..	..	..	2	2
25–	32	598	13	1	..	612	644	3,303	57	7	26	56	1	..	..	57	129	276	..	26	26	83	3	..	..	..	3
30–	28	447	35	1	..	483	511	4,487	122	4	50	77	3	..	..	80	188	444	6	50	56	284	6	..	1	10	17
35–	20	202	41	1	..	244	264	4,045	113	2	45	76	6	..	..	82	156	398	5[2]	45	50	428	8	..	4	15	27
40–	9	81	31	6	..	118	127	3,124	79	1	93	47	7	1	..	55	95	323	5	93	98	662	9	3	5	20	37
45–	10	39	23	3	..	65	75	2,018	73	..	103	26	6	1	..	33	72	281	2[2] 3	103	108	970	17	..	3	51	71
50–	3	27	20	2	1	50	53	1,149	36	3	36	14	1	..	..	15	82	172	2[3] 3	36	41	887	12	1	9	74	96
55–	2	9	6	1	..	16	18	621	19	3	14	7	1	..	1	9	34	79	2	14	16	606	12	2	6	37	57
60–	1	1	4	..	..	5	6	373	15	2	..	5	1	..	..	6	13	36	..	..	..	404	10	3	1	16	30
65–	..	..	..	..	..	..	..	232	13	..	..	2	1	..	..	3	10	26	..	..	..	216	12	..	4	26	42
70–	..	..	1	1	..	2	2	123	9	..	..	2	..	..	..	2	10	21	..	..	..	58	4	..	..	11	15
75–	..	..	..	..	..	..	..	45	6	..	..	..	..	..	..	..	4	10	..	..	..	9	1	..	..	3	4
80–	..	..	..	..	..	..	..	13	3	..	..	..	..	..	..	..	1	4	..	..	..	5					
85–	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	1	1
Total	117	1,826	179	16	1	2,022	2,139	20,540	561	25	374	335	27	2	1	365	814	2,139	28	374	402	4,630	94	9	33	266	402

WIDOWERS.—W. *Officers who entered from* 1808 *to* 1822, *and afterwards became Widowers.*

Age.	No. 1. Active List.															No. 2. Retired List.								
	Entered.					Lived.	Died.	Withdrew.	Retired.	Remarried.				Living, 1858.	Total.	Entered.			Lived.	Died.	Withdrew.	Remarried.	Living, 1858.	Total.
	1st time.	2nd.	3rd.	4th.	Total.					1st time.	2nd.	3rd.	Total.			Retired, who became Widowers.	Widowers Retired from Active List.	Total.						
20–	5	..	..	..	5	10	1	..	..	..	..	..	..	..	1									
25–	14	..	..	..	14	41	2	..	..	5	..	..	5	..	7									
30–	25	3	..	..	28	100	3	1	..	9	1	..	10	..	14									
35–	41	2	..	..	43	207	10	2	2	10	1	..	11	..	25	1	2	3	5	..	1	2	..	3
40–	29	3	..	..	32	238	11	1	3	18	1	..	19	..	34	..	3	3	10	..	1	1	..	2
45–	21	3	1	..	25	219	5	..	7	14	2	..	16	..	28	1	7	8	23	..	..	3	..	3
50–	14	1	..	..	15	182	7	..	3	15	2	1	18	2	30	5	3	8	45	1	..	6	..	7
55–	7	1	..	1	9	102	4	1	2	4	..	..	4	4	15	4	2	6	44	1	1	3	4	9
60–	5	1	..	..	6	84	2	2	1	3	..	..	3	2	10	1	1	2	15	1	1	..	2	4
65–	2	1	..	..	3	58	4	1	..	..	..	..	..	4	9	4	..	4	16	3	..	..	3	6
70–	2	..	..	..	2	30	2	..	1	1	..	..	1	2	6	..	1	1	3					
75–	..	..	..	..	..	15	1	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	..	1
80–	..	..	..	..	..	7	1	..	..	..	..	..	..	..	1									
85–	..	..	..	..	..	2	..	..	..	..	..	..	..	1	1									
Total	165	15	1	1	182	1,295	53	8	19	79	7	1	87	15	182	16	19	35	162	7	4	15	9	35

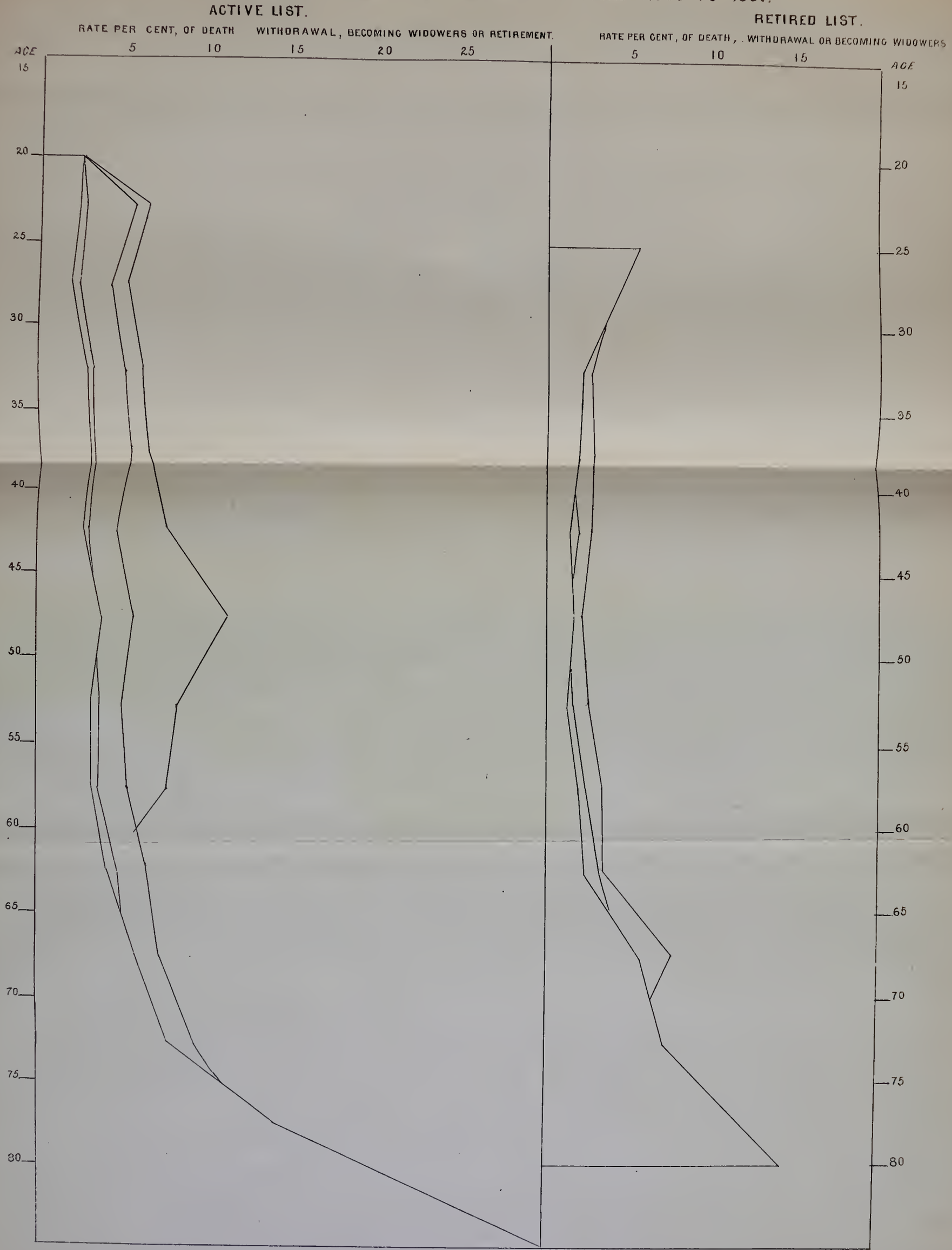
W. *Officers who entered from* 1823 *to* 1857, *and afterwards became Widowers.*

Age.	No. 3. Active List.															No. 4. Retired List.								
	Entered.					Lived.	Died.	Withdrew.	Retired.	Remarried.				Living, 1858.	Total.	Entered.			Lived.	Died.	Withdrew.	Remarried.	Living, 1858.	Total.
	1st time.	2nd.	3rd.	4th.	Total.					1st time.	2nd.	3rd.	Total.			Retired, who became Widowers.	Widowers Retired from Active List.	Total.						
19–	1	..	..	..	1	1																		
20–	17	..	..	..	17	34	1	1	..	4	..	..	4	2	8									
25–	42	1	..	..	43	130	5	..	1	9	1	..	10	3	19	..	1	1	2	1	..	..	..	1
30–	52	..	..	..	52	236	4	1	1	26	..	..	26	8	40	1	1	2	5	..	..	1	..	1
35–	35	4	..	..	39	268	6	2	3	24	..	..	24	12	47	3	3	6	15	..	..	3	2	5
40–	18	4	1	..	23	182	5	1	1	13	4	..	17	8	32	5	1	6	20	..	..	3	2	5
45–	5	3	..	..	8	110	5	..	5	8	2	..	10	8	28	2	5	7	25	3	..	3	1	7
50–	..	..	..	..	..	15	2	..	2	1	..	..	1	4	9	4	2	6	16	2	..	2	5	9
55–	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	4	..	..	..	1	1
60–	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	1
Total	170	12	1	..	183	976	28	5	13	85	7	..	92	45	183	17	13	30	90	7	..	12	11	30

W.—*Officers who entered, from* 1808 *to* 1857, *inclusive, and afterwards became Widowers.*

Age.	No. 5. Active List.														No. 6. Retired List.										
	Entered.					Lived.	Died.	Withdrew.	Retired.	Remarried.				Living, 1858.	Total.	Entered.			Lived.	Died.	Withdrew.	Remarried.	Living, 1858.	Total.
	1st time.	2nd.	3rd.	4th.	Total.					1st time.	2nd.	3rd.	Total.			Retired, who became Widowers.	Widowers Retired from Active List.	Total.						
19–	1	..	..	..	1	1																		
20–	22	..	..	..	22	44	2	1	..	4	..	..	4	2	9									
25–	56	1	..	..	57	171	7	..	1	14	1	..	15	3	26	..	1	1	2	1	..	..	..	1
30–	77	3	..	..	80	336	7	2	1	35	1	..	36	8	54	1	1	2	5	..	..	1	..	1
35–	76	6	..	..	82	475	16	4	5	34	1	..	35	12	72	4	5	9	20	..	1	5	2	8
40–	47	7	1	..	55	420	16	2	4	31	5	..	36	8	66	5	4	9	30	..	1	4	2	7
45–	26	6	1	..	33	329	10	..	12	22	4	..	26	8	56	3	12	15	48	3	..	6	1	10
50–	14	1	..	..	15	197	9	..	5	16	2	1	19	6	39	9	5	14	61	3	..	8	5	16
55–	7	1	..	1	9	102	4	1	2	4	..	..	4	4	15	6	2	8	48	1	1	3	5	10
60–	5	1	..	..	6	84	2	2	1	3	..	..	3	2	10	1	1	2	18	2	1	..	2	5
65–	2	1	..	..	3	58	4	1	..	..	..	..	..	4	9	4	..	4	16	3	..	..	3	6
70–	2	..	..	..	2	30	2	..	1	1	..	..	1	2	6	..	1	1	3					..
75–	..	..	..	..	..	15	1	..	..	..	..	..	..	..	1	..	..	..	1	1	..	..	..	1
80–	..	..	..	..	..	7	1	..	..	..	..	..	..	..	1									
85–	..	..	..	..	..	2	..	..	..	..	..	..	..	1	1									
Total	335	27	2	1	365	2,271	81	13	32	164	14	1	179	60	365	33	32	65	252	14	4	27	20	65

Nº 3. MADRAS MILITARY FUND—MARRIED OFFICERS—1808 TO 1857.

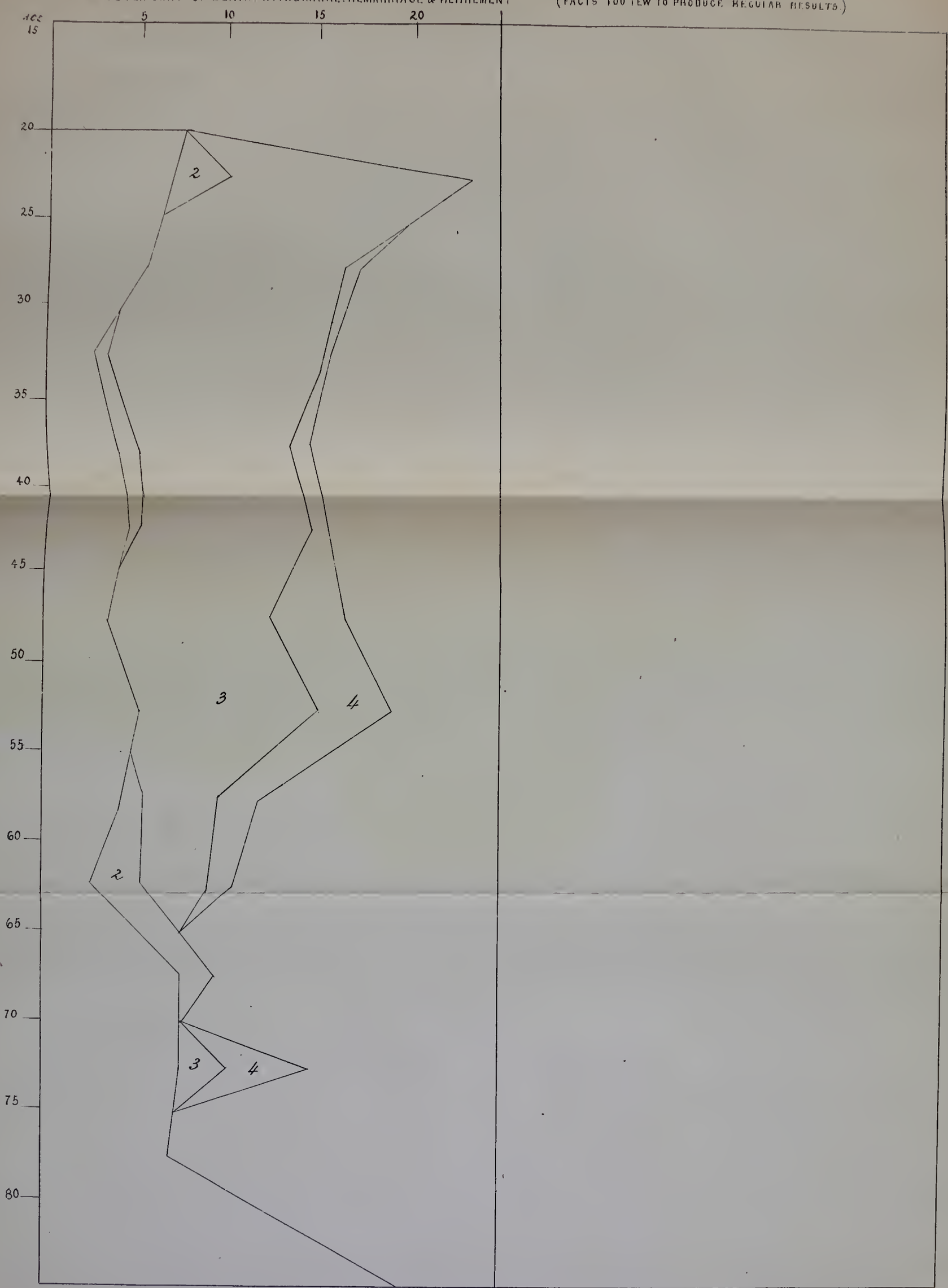


THE FIRST SPACE SHOWS THE RATE PER CENT OF MORTALITY.
THE SECOND SPACE " THE RATE PER CENT OF WITHDRAWAL.
THE THIRD SPACE " THE RATE PER CENT OF BECOMING WIDOWERS.
THE FOURTH SPACE " THE RATE PER CENT OF RETIREMENT.

THE FIRST SPACE SHOWS THE RATE PER CENT OF MORTALITY.
THE SECOND SPACE " THE RATE PER CENT OF WITHDRAWAL.
THE THIRD SPACE " THE RATE PER CENT OF BECOMING WIDOWERS

LIBRARY

No. 4. MADRAS MILITARY FUND_WIDOWERS_1808 TO 1857.



THE FIRST SPACE SHOWS THE RATE PER CENT OF MORTALITY AMONGST WIDOWERS BETWEEN THE CORRESPONDING AGES.
" SECOND " " THE RATE PER CENT OF WITHDRAWAL.
" THIRD " " THE RATE PER CENT OF REMARRIAGE.
" FOURTH " " THE RATE PER CENT OF RETIREMENT.

Madras Military Fund, 1808 *to* 1857.—*Officers on Active and Retired Lists combined.—Percentages deduced from the preceding Tables.*

(The Number exposed to Risk is the Living in the Quinquennial Period of Age, less half of all who entered or went off the Fund from any cause.)

Age.	Exposed to Risk.				Bachelors.				Married.				Widowers.				Total combined.		
	Bachelors.	Married.	Widowers.	Total.	Died.	Withdrew.	Married.	Total.	Died.	Withdrew.	Became Widowers.	Total.	Died.	Withdrew.	Remarried.	Total.	Died.	Withdrew.	Total.
14–	4778·5	9·5	·5	4788·5	2·78	·27	·17	3·22	..	..	10·53	10·53	..	..	..	..	2·78	·27	3·05
20–	15339·	765·	29·5	16133·5	3·35	·76	2·60	6·71	2·09	·39	2·88	5·36	6·78	3·39	13·56	23·73	3·30	·75	4·05
25–	11725·5	2976·	132·	14833·5	3·53	·84	4·76	9·13	2·02	·24	1·92	4·18	6·06	..	11·36	17·42	3·25	·71	3·96
30–	7086·	4356·	276·5	11718·5	3·50	·86	6·13	10·49	2·94	·09	1·86	4·89	2·53	·72	13·38	16·63	3·27	·57	3·84
35–	3892·	4189·	416·5	8497·5	3·52	1·13	5·11	9·76	2·89	·05	2·05	4·99	3·84	1·20	9·60	14·64	3·22	·60	3·82
40–	2236·	3551·	386·5	6173·5	4·07	2·06	3·80	9·93	2·48	·11	1·69	4·28	4·14	·78	10·35	15·27	3·16	·86	4·02
45–	1359·	2782·	324·5	4465·5	3·61	1·55	3·38	8·54	3·24	..	1·29	4·53	4·01	..	9·86	13·87	3·40	·47	3·87
50–	730·5	1933·	221·5	2885·	3·42	1·37	3·15	7·94	2·48	·21	1·24	3·93	5·42	..	12·19	17·61	2·95	·49	3·44
55–	371·	1177·5	133·5	1682·	4·58	1·35	2·43	8·36	2·63	·42	1·27	4·32	3·75	1·50	5·24	10·49	3·15	·71	3·86
60–	198·5	755·5	92·5	1046·5	4·53	2·52	·50	7·55	3·31	·66	·93	4·90	4·32	3·24	3·24	10·80	3·63	1·24	4·87
65–	134·	432·	66·5	632·5	2·24	·75	..	2·99	5·79	..	1·62	7·41	10·53	1·50	..	12·03	5·53	·32	5·85
70–	71·5	172·5	29·5	273·5	8·39	1·40	..	9·79	7·54	..	1·16	8·70	6·78	..	3·39	10·17	7·68	·37	8·05
75–	21·5	50·5	15·	87·	13·95	..	..	13·95	13·86	..	..	13·86	13·33	..	..	13·33	13·79	..	13·79
80–	5·5	16·5	6·5	28·5	18·18	..	..	18·18	18·18	..	..	18·18	15·38	..	..	15·38	17·54	..	17·54
85–	..	3·	2·	5·															
	47948·5	23169·	2133·	73250·5	3·44	·88	3·68	8·00	2·83	·15	1·72	4·70	4·45	·80	9·66	14·91	3·28	·65	3·93

Madras Military Fund, 1808 *to* 1857—*Officers on Active and Retired Lists distinguished.*

Age.	Exposed to Risk.								Percentages on 100 Living in the Middle of the Quinquennial Period of Age.								
									Bachelors.								
	Bachelors.		Married Officers.		Widowers.				Active.					Retired.			
	Active.	Retired.	Active.	Retired.	Active.	Retired.	Total Active.	Total Retired.	Died.	Withdrew.	Retired.	Married.	Total.	Died.	Withdrew.	Married.	Total.
14–	4778·	·5	9·5	..	·5	..	4788·	·5	2·78	·27	·02	·17	3·24				
20–	15292·5	46·5	753·5	11·5	29·5	..	16075·5	58·	3·31	·74	·20	2·61	6·86	15·05	8·60	..	23·65
25–	11557·	168·5	2907·5	68·5	131·	1·	14595·5	238·	3·49	·72	·60	4·82	9·63	5·93	8·90	·60	15·43
30–	6741·5	344·5	4103·5	252·5	273·	3·5	11118·	600·5	3·40	·56	1·23	6·26	11·45	5·52	6·68	3·48	15·68
35–	3480·	412·	3792·	397·	404·	12·5	7676·	821·5	3·68	·83	1·58	5·40	11·49	2·18	3·64	2·67	8·49
40–	1824·5	411·5	2946·5	604·5	363·5	23·	5134·5	1039·	4·49	·66	3·78	4·06	12·99	2·19	8·26	2·67	13·12
45–	916·5	442·5	1876·	906·	288·5	36·	3081·	1384·5	4·36	·44	5·24	3·60	13·64	2·03	3·84	2·94	8·81
50–	392·	338·5	1077·5	855·5	173·	48·5	1642·5	1242·5	4·85	·77	5·61	4·85	16·08	1·77	2·07	1·18	5·02
55–	172·	199·	589·5	588·	92·	41·5	853·5	828·5	5·23	·58	1·74	3·49	11·04	4·02	2·01	1·51	7·54
60–	115·	83·5	358·5	397·	77·	15·5	550·5	496·	4·35	·87	..	..	5·22	4·79	4·79	1·20	10·78
65–	90·5	43·5	224·	208·	54·	12·5	368·5	264·	2·21	1·11	..	..	3·32	2·30	..	..	2·30
70–	55·5	16·	116·5	56·	27·	2·5	199·	74·5	10·81	1·80	..	..	12·61				
75–	18·5	3·	42·	8·5	14·5	·5	75·	12·	16·22	..	..	..	16·22				
80–	5·5	..	11·5	5·	6·5	..	23·5	5·	18·18	..	..	..	18·18				
85–	..	..	..	3·	2·	..	2·	3·									
	45439·	2509·5	18808·	4361·	1936·	197·	66183·	7067·5	3·45	·66	·84	3·75	8·70	3·27	4·90	2·23	10·40

Madras Military Fund, 1808 *to* 1857—*Officers on Active and Retired Lists distinguished* (continued).

Age.	Percentages on 100 Living in the Middle of the Quinquennial Period of Age (*continued*).																										
	Married Officers.									Widowers.									Total Active.				Total Retired.		
	Active.					Retired.				Active.					Retired.										
	Died.	Withdrew.	Retired.	Became Widowers.	Total.	Died.	Withdrew.	Became Widowers.	Total.	Died.	Withdrew.	Retired.	Remarried.	Total.	Died.	Withdrew.	Remarried.	Total.	Died.	Withdrew.	Retired.	Total.	Died.	Withdrew.	Total.
14–	..	..	..	10·53	10·53	..	..	..	..	..	..	..	..	..	..	..	..	..	2·78	·27	·02	3·07			
20–	2·12	·40	·93	2·92	6·37	..	..	..	..	6·78	3·39	..	13·56	23·73	..	..	..	..	3·27	·73	·23	4·23	12·07	6·90	18·97
25–	1·96	·24	·89	1·96	5·05	4·28	..	..	4·28	5·34	..	·76	11·45	17·55	100·	..	..	100·	3·21	·62	·66	4·49	5·88	6·30	12·18
30–	2·97	·10	1·22	1·95	6·24	2·38	..	·40	2·78	2·56	·73	·37	13·19	16·85	..	..	28·56	28·56	3·22	·40	1·21	4·83	4·16	3·83	7·99
35–	2·98	·05	1·19	2·16	6·38	2·02	..	1·01	3·03	3·96	·99	1·24	8·66	14·85	..	8·00	40·00	48·	3·35	·46	1·37	5·18	2·07	1·95	4·02
40–	2·68	·03	3·16	1·87	7·74	1·49	·50	·83	2·82	4·40	·55	1·10	9·90	15·95	..	4·35	17·39	21·74	3·45	·29	3·23	6·97	1·73	3·66	5·39
45–	3·89	..	5·49	1·76	11·14	1·88	..	·33	2·21	3·47	..	4·16	9·01	16·64	8·33	..	16·67	25·	3·99	·13	5·29	9·41	2·09	1·23	3·32
50–	3·34	·28	3·34	1·39	8·35	1·40	·12	1·05	2·57	5·20	..	2·89	10·98	19·07	6·19	..	16·50	22·69	3·90	·36	3·84	8·10	1·69	·64	2·33
55–	3·22	·51	2·38	1·53	7·64	2·04	·34	1·02	3·40	4·35	1·09	2·17	4·35	11·96	2·41	2·41	7·23	12·05	3·75	·59	2·23	6·57	2·53	·84	3·37
60–	4·18	·56	..	1·67	6·41	2·52	·76	·25	3·53	2·60	2·60	1·30	3·90	10·40	12·90	6·45	..	19·35	4·00	·91	·18	5·09	3·23	1·61	4·84
65–	5·80	..	..	1·34	7·14	5·77	..	1·92	7·69	7·41	1·85	..	..	9·26	24·00	..	..	24·	5·16	·54	..	5·70	6·06	..	6·06
70–	7·72	..	..	1·72	9·44	7·14	..	..	7·14	7·41	..	3·70	3·70	14·81	..	..	..	..	8·54	·50	·50	9·54	5·37	..	5·37
75–	14·29	..	..	..	14·29	11·76	..	..	11·76	6·90	..	..	..	6·90	200·	..	..	00·	13·33	..	..	13·33	16·67	..	16·67
80–	26·09	..	..	..	26·09	..	..	..	..	15·38	..	..	..	15·38	..	..	..	..	21·28	..	..	21·28			
85–																									
	2·98	·13	1·99	1·94	7·04	2·16	·21	·76	3·13	4·18	·67	1·65	9·25	15·75	7·11	2·03	13·71	22·85	3·34	·51	1·19	5·03	2·69	1·92	4·61

Comparison of the Percentage Rates of Mortality, Withdrawal, Retirement, and Marriage of Officers who entered the Madras Military Fund in the two Periods, (1) 1808 *to* 1822 *inclusive, and* (2) 1823 *to* 1857 *inclusive.*

Age.	Exposed to Risk.												Bachelors, Active.									
	Bachelors.				Married.				Widowers.				(1).					(2).				
	Active.		Retired.		Active.		Retired.		Active.		Retired.											
	(1)	(2).	(1).	(2).	(1).	(2).	(1).	(2).	(1).	(2).	(1).	(2).	Died.	Withdrew.	Retired.	Married.	Total.	Died.	Withdrew.	Retired.	Married.	Total.
14–	1231·5	3546·5	..	·5	2·	7·5	..	..	..	·5	..	..	3·82	·49	..	..	4·31	2·42	·20	·03	·23	2·88
20–	4752·5	10540·	16·	30·5	147·	606·5	4·5	7·	7·	22·5	..	..	3·91	·97	·19	1·77	6·84	3·05	·64	·20	2·99	6·88
25–	4870·5	6686·5	61·5	107·	817·5	2090·	20·5	48·	30·5	100·5	..	1·	4·35	·78	·41	3·18	8·72	2·87	·67	·73	6·01	10·28
30–	3558·5	3183·	160·5	184·	1597·5	2506·	83·5	169·	79·	194·	..	3·5	4·05	·62	1·32	4·86	10·85	2·67	·50	1·13	7·82	12·12
35–	2217·	1263·	254·5	157·5	1847·5	1944·5	154·5	242·5	173·	231·	2·	10·5	4·57	·99	1·35	4·74	11·65	2·14	·55	1·98	6·57	11·24
40–	1283·	541·5	266·5	145·	1689·	1257·5	284·	320·5	205·	158·5	7·5	15·5	4·37	·86	3·82	2·73	11·78	4·80	·18	3·69	7·20	15·87
45–	717·	199·5	302·	140·5	1264·	612·	555·	351·	192·5	96·	17·5	18·5	5·16	·56	4·60	3·91	14·23	1·50	..	7·52	2·51	11·53
50–	355·	37·	294·5	44·	915·5	162·	718·5	137·	160·5	12·5	37·5	11·	4·23	·85	4·80	5·07	14·95	10·81	..	13·51	2·70	27·02
55–	172·	..	199·	..	534·5	55·	544·5	43·5	92·	..	38·5	3·	5·23	·58	1·74	3·49	11·04					
60–	115·	..	83·5	..	336·5	22·	372·5	24·5	77·	..	13·	2·5	4·35	·87	..	..	5·22					
65–	90·5	..	43·5	..	218·	6·	199·5	8·5	54·	..	12·5	..	2·21	1·10	..	..	3·31					
70–	55·5	..	16·	..	111·5	5·	56·	..	27·	..	2·5	..	10·81	1·80	..	..	11·61					
75–	18·5	..	3·	..	42·	..	8·5	..	14·5	..	·5	..	16·22	..	..	..	16·22					
80–	5·5	..	..	..	11·5	..	5·	..	6·5	..	..	..	18·18	..	..	..	18·18					
85–	..	..	..	..	..	..	3·	..	2·													
Total	19442·	25997·	1700·5	809·	9534·	9274·	3009·5	1351·5	1120·5	815·5	131·5	65·5	4·24	·80	1·07	3·11	9·22	2·86	·55	·66	4·24	8·31

Comparison of the Percentage Rates of Mortality, Withdrawal, Retirement, and Marriage of Officers who entered the Madras Military Fund in the two Periods, (1) 1808 *to* 1822 *inclusive, and* (2) 1823 *to* 1857 *inclusive*—(continued).

Age.	Bachelors Retired.								Married Active.										Married Retired.							
	(1).				(2).				(1).					(2).					(1).				(2).			
	Died.	Withdrew.	Married.	Total.	Died.	Withdrew.	Married.	Total.	Died.	Withdrew.	Retired.	Became Widowers.	Total.	Died.	Withdrew.	Retired.	Became Widowers.	Total.	Died.	Withdrew.	Became Widowers.	Total.	Died.	Withdrew.	Became Widowers.	Total.
14–	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13·33	13·33								
20–	12·50	6·25	..	18·75	16·39	9·84	..	26·23	2·04	..	·68	3·40	6·12	2·14	·49	·99	2·80	6·42								
25–	6·50	1·63	..	8·13	5·61	13·08	·93	19·62	2·08	..	·86	1·71	4·65	1·91	·33	·91	2·06	5·21	..	..	..	..	6·25	..	..	6·25
30–	4·36	7·48	1·87	13·71	6·52	5·98	4·89	17·39	4·19	..	1·06	1·75	7·00	2·19	·16	1·32	2·08	5·75	4·79	..	..	4·79	1·18	..	·59	1·77
35–	3·14	3·93	1·96	9·03	·63	3·18	3·81	7·62	4·01	..	·92	2·33	7·26	2·01	·10	1·44	2·01	5·56	1·30	..	·65	1·95	2·47	..	1·24	3·71
40–	2·63	11·26	2·63	16·52	1·38	2·76	2·76	6·90	3·26	·06	2·96	1·89	8·17	1·91	..	3·42	1·83	7·16	1·41	·70	..	2·11	1·56	·31	1·56	3·43
45–	2·65	5·63	2·65	10·93	·71	..	3·56	4·27	4·03	..	4·91	1·98	10·92	3·60	..	6·70	1·31	11·61	2·34	..	·18	2·52	1·14	..	·57	1·71
50–	1·70	2·38	1·36	5·44	2·27	..	..	2·27	3·82	·33	3·28	1·64	9·07	·62	..	3·70	..	4·32	1·25	·14	·70	2·09	2·19	..	2·92	5·11
55–	4·02	2·01	1·51	7·54	..	..	..	..	3·37	·56	2·43	1·68	8·04	1·82	..	1·82	..	3·64	2·20	·37	·73	3·30	..	..	4·60	4·60
60–	4·79	4·79	1·20	10·78	..	..	..	..	3·86	·59	..	1·78	6·23	9·09	..	..	..	9·09	2·42	·81	·27	3·50	4·08	..	..	4·08
65–	2·30	..	..	2·30	..	..	..	..	5·96	..	..	1·38	7·34	..	..	..	..	..	5·51	..	2·01	7·52	11·76	..	..	11·76
70–	..	..	..	..	..	..	..	..	8·07	..	..	1·79	9·86	..	..	..	..	..	7·14	..	..	7·14				
75–	..	..	..	..	..	..	..	..	14·29	..	..	..	14·29	..	..	..	..	..	11·76	..	..	11·76				
80–	..	..	..	..	..	..	..	..	26·09	..	..	..	26·09													
85–																										
	3·18	5·06	1·82	10·06	3·46	4·57	3·09	11·12	3·82	·09	2·07	1·91	7·89	2·12	·17	1·91	1·97	6·17	2·29	·27	·53	3·09	1·85	·07	1·26	3·18

Comparison of the Percentage Rates of Mortality, Withdrawal, Retirement, and Marriage of Officers who entered the Madras Military Fund in the two Periods, (1) 1808 *to* 1822 *inclusive, and* (2) 1823 *to* 1857 *inclusive*—(continued).

Age.	Widowers Active. (1). Died.	Withdrew.	Retired.	Remarried.	Total.	(2). Died.	Withdrew.	Retired.	Remarried.	Total.	Widowers Retired. (1). Died.	Withdrew.	Remarried.	Total.	(2). Died.	Withdrew.	Remarried.	Total.	Totals. Exposed to Risk. (1).	(2).	Percentages. (1). Died.	Withdrew.	Both.	(2). Died.	Withdrew.	Both.
14–	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1233·5	3555·	3·81	·49	4·30	2·42	·20	2·62
20–	14·29	..	..	..	14·29	4·44	4·44	..	17·78	26·66	..	..	..	..	..	..	..	..	4927·	11206·5	3·90	·95	4·85	3·03	·66	3·69
25–	6·56	..	..	16·39	22·95	4·98	..	1·00	9·95	15·93	..	..	..	..	100·	..	..	100·	5800·5	9033·	4·05	·67	4·72	2·73	·73	3·46
30–	3·80	1·27	..	12·66	17·73	2·06	·52	·52	13·40	16·50	..	..	..	..	..	..	28·57	28·57	5479·	6239·5	4·11	·64	4·75	2·53	·51	3·04
35–	5·78	1·16	1·16	6·36	14·46	2·60	·87	1·30	10·39	15·16	..	50·	100·	150·	..	..	28·57	28·57	4648·5	3849·	4·19	·75	4·94	2·05	·42	2·47
40–	5·37	·49	1·46	9·27	16·59	3·15	·63	·63	10·73	15·14	..	13·33	13·33	26·66	..	..	19·35	19·35	3735·	2438·5	3·56	1·23	4·79	2·54	·29	2·83
45–	2·60	..	3·64	8·31	14·55	5·21	..	5·21	10·42	20·84	..	..	17·14	17·14	16·22	..	16·22	32·44	3048·	1417·5	3·74	·69	4·43	2·68	..	2·68
50–	4·36	..	1·87	11·21	17·44	16·	..	16·	8·	40·	2·67	..	16·	18·67	18·18	..	18·18	36·36	2481·5	403·5	2·90	·56	3·46	3·22	..	3·22
55–	4·35	1·09	2·17	4·35	11·96	..	..	..	..	..	2·60	2·60	7·79	12·99	..	..	..	..	1580·5	101·5	3·29	·76	4·05	·99	..	·99
60–	2·60	2·60	1·30	3·90	10·40	..	..	..	..	..	7·69	7·69	..	15·38	40·	..	..	40·	997·5	49·	3·41	1·30	4·71	8·16	..	8·16
65–	7·41	1·85	..	..	9·26	..	..	..	..	..	24·	..	..	24·	..	..	..	..	618·	14·5	5·50	·32	5·82	6·90	..	6·90
70–	7·41	..	7·70	3·70	14·81	..	..	..	..	..	..	..	..	..	..	..	..	..	268·5	5·	7·82	·37	8·19			
75–	6·90	..	..	..	6·90	..	..	..	..	..	200·	..	..	200·	..	..	..	..	87·	..	13·79	..	13·79			
80–	15·38	..	..	..	15·38	..	..	..	..	..	..	..	..	..	..	..	..	..	28·5	..	17·54	..	17·54			
85–	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5·							
	4·73	·71	1·79	7·76	14·90	3·43	·61	1·59	11·28	16·91	5·32	3·04	11·41	19·77	10·69	..	18·32	29·01	34938·	38312·5	3·92	·78	4·70	2·69	·53	3·22

Madras Military Fund, 1808 *to* 1857—*Table showing, in* 1,708 *Marriages in which the Ages of both Husband and Wife were given, the Proportion of Officers at each Quinquennial Period of Age marrying Wives Older or Younger than themselves, by successive Differences of Five Years, and distinguishing whether First, Second, Third, or Fourth Time.*

Wife's Age—	12-				15-				20-				25-				30-				35-				40-				45-				50-55.				Total.			
Husband's Age.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3-4.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3.	Total.	1.	2.	3-4.	Total.
15-	..	..	..	..	6	..	..	6	5	..	..	5	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	..	..	12
20-	3	..	..	3	141	..	..	141	155	1	..	156	48	1	..	49	5	1	..	6	2	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	354	3	..	357
25-	2	..	..	2	155	1	1	157	212	7	..	219	106	3	..	109	16	..	..	16	4	..	..	4	1	..	..	1	..	..	..	..	..	..	..	..	496	11	1	508
30-	..	..	..	..	94	8	1	103	157	18	..	175	78	3	..	81	34	5	..	39	3	..	..	3	3	..	..	3	..	..	..	..	..	..	..	..	369	34	1	404
35-	1	..	..	1	31	9	..	40	56	13	..	69	46	8	..	54	18	5	1	24	9	3	..	12	1	..	..	1	..	1	..	1	..	..	..	..	162	39	1	202
40-	..	..	..	..	12	4	1	17	24	14	1	39	20	8	2	30	9	3	1	13	6	..	..	6	..	1	..	1	..	1	1	2	..	..	..	..	71	31	6	108
45-	..	..	..	..	6	2	..	8	10	6	..	16	3	2	..	5	9	6	1	16	5	3	1	9	..	1	..	1	..	..	..	..	..	..	..	..	33	20	2	55
50-	..	..	..	..	3	..	..	3	4	..	2	6	4	3	1	8	3	6	1^4	10	3	3	..	6	2	2	..	4	..	2	..	2	..	..	1	1	19	16	4 1^4	40
55-	..	..	..	..	..	..	..	..	2	1	1	4	1	..	..	1	..	1	..	1	4	2	..	6	1	..	..	1	..	..	..	..	1	1	..	2	9	5	1	15
60-	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	3	..	3	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	4	..	5
65-																																								
70-75	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	2
	6	..	..	6	448	25	3	476	625	60	4	689	307	28	3	338	94	30	4 1^4	129	37	11	1	49	8	4	..	12	..	4	1	5	1	2	1	4	1,526	164	17 1^4	1,708

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